An Address
ON
APHASIA.

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BY

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I HAVE had recently under my care two cases of aphasia which terminated after a few weeks' illness, and we were able to complete our notes by careful *post mortem* examinations. They illustrate the two principal clinical types of aphasia and the lesions associated with them, and may serve to introduce a discussion of the recent criticisms which have been directed against the doctrine of Broca.

These types are:

(1) *Motor or Ataxic Aphasia*, in which inability to speak is associated with paralysis of the right side of the body. This is generally held to be dependent upon a lesion of the third left frontal convolution or the fibres coming from it.

(2) *Sensory or Amnesic Aphasia*, in which the patient can speak although his vocabulary is limited, and he uses wrong words, but he can neither read nor write, although his eyesight is good and the movements of his hands are not affected. In this the lesion is localized in the neighbourhood of the first temporal sphenoidal convolution, the angular gyrus and the supramarginal convolution. The first case illustrates the former type.

CASE I.—*Motor Aphasia.*

J. M., coachman, aged 64, was admitted to the General Hospital on February 17th, 1910, with a history that three days before he had suddenly lost his speech; he was at dinner, and when his wife spoke to him he could not answer her; he wanted to return to work, and was annoyed when she stopped him. There was no convulsion, or any sign of paralysis or loss of consciousness. When admitted he was quite unable to speak, and could make only inarticulate noises when pressed, but he seemed to understand all that was said to him, and was able to read and write. He could do a simple addition sum, but when set an equally simple sum in division he failed. There was slight flattening of the lower part of the right side of the face, and the tongue deviated towards the right side, but there was no weakness of the right arm or leg; the knee-jerks were normal on both sides, and the plantar reflexes were flexor. His pulse was 56, blood pressure 120; the artery felt thickened; the heart was not enlarged, its sounds were normal; the urine was free from albumen.

On February 23rd some weakness of the right hand was noticed, and later on he lost the power of writing, became dazed and stupid, and by midday he could not be roused to take his food. The right side of the face was paralysed, and the right arm and leg were motionless and slightly stiff. The right plantar reflex had become extensor, and the leg was not drawn up, while on the left side it was flexor, and the leg was drawn up briskly. He lay in this condition for three or four days, but on the 27th he improved, and showed response when spoken to, but could not speak, and the right arm and leg were completely paralysed. On February 28th he was found to have lost the power of reading, and the attempt to write his name with his left hand was a miserable failure. He went on for some time without any change, but on March 17th there was a sudden rise of temperature, reaching on the following day to 102.8°, and after that his temperature remained irregular until he died on March 31st.

Necropsy.

The *post-mortem* examination was performed by Dr. Douglas, a summary of whose report is as follows:

The body was thin and wasted; both lungs showed considerable emphysema, and the lower half of the right lung was hepatized. The right ventricle of the heart was dilated, and the radial arteries were thickened. There was some fibrosis present in both kidneys.

Brain.—There was no external change visible in the brain. On section the softened area was found lying internal to the grey matter of the island of Reil on the left side. Portions of the deep-lying nuclei were completely macerated. The anterior part of the thalamus and the internal capsule seemed to be of normal consistence, but the posterior external part of the thalamus, and that part of the corona radiata entering the posterior portion of the internal capsule and a small portion of the capsule itself were softened. The posterior part of the nucleus caudatus was softened. Of the lenticular nucleus, the putamen was entirely destroyed, except for a small portion occupying its antero-inferior aspect, while the globus pallidus was normal. The posterior two-thirds of the external capsule and the claustrum were softened. The grey matter of the island of Reil was intact except a minute portion at the posterior extremity, but the posterior half of the white matter, between the grey matter of the convolutions and the claustrum, was softened. No blocked vessel was seen, but the arteries at the base of the brain were thickened, and showed numerous atheromatous patches. The third left frontal convolution was quite normal.

This is a case of pure motor aphasia, in which the patient could do everything but speak: he could hear and understand all that was said to him; he could read and write, and, although his power of calculating was not very good, it is not possible to say that this was the result of the brain condition that had supervened. This is the type of aphasia which Professor Wyllie has called infrapictorial motor aphasia, due, in his opinion, to a subcortical lesion, which cuts across the fibres running through Broca's convolution and also that coming from the right hemisphere, termed the "callosal speech tract." He says it would appear that a lesion in the upper and anterior part of the island of Reil may, by penetrating into the subadjacent white matter, cut them both across, and so produce the infrapictorial variety of motor aphasia, and this, in fact, was what was found at the *post-mortem* examination. It is difficult to see why a lesion which severs the fibres before they reach the internal capsule should be capable of producing aphasia, but after they have combined together and form part of that band of fibres should not do so. Professor Wyllie says that below the upper part of the internal capsule the direct fibres from Broca's convolution on the left side and the callosal fibres from the right side diverge from each other after entering the internal capsule, and are less and less likely to be cut across by the same lesion until they come near each other again in the pons, and therefore lesions at and below the upper part of the internal capsule usually produce merely a dysarthria or difficulty of articulation, and not an aphasia of the infrapictorial motor type. This explanation may satisfy those who believe that the function of the third left frontal convolution has been established and are ready to accept any excuse for those awkward facts which do not conform to this view.

CASE II.—*Sensory Aphasia.*

J. B., brass-caster, aged 35, was admitted to the General Hospital on March 16th, 1910, with a history that three weeks before admission, while at his work, he was taken with sudden giddiness, temporary loss of sight, and severe headache. He stayed at home for three days, and then went back to try to do his work, but was unable to do it, and had been at home since. After his attack there was numbness and weakness in the right arm and hand, and to a less extent in the left hand. His speech was unaffected, but he was irritable, and complained of constant headache. Three days before his admission he seemed worse; he forgot words, and was unintelligible. The weakness of the right arm and leg increased, so that he dragged his right leg. His memory was defective, and he seemed at times not to understand what was said to him. He was drowsy by day and sleepless by night.

On admission he was a well-developed man of healthy and intelligent aspect. The right side of the face was flattened, and the tongue deviated to the right. The right arm was weak, but could be moved freely, and the right leg was dragged a little in walking. The right knee-jerk was increased, and the plantar reflex was extensor; the organic reflexes were normal. The movements of the eyeballs, the pupils, and ophthalmoscopic appearances were all normal; there was impaired sensation over the right trigeminal area.

The Aphasia.—The patient could say short sentences, pronouncing his words perfectly well; for example, when he was asked how he was, he said, "All right." Asked if he had any pain, he said, "In my head," but he could not tell his own or his wife's name, yet he said quite distinctly, "I do not know now." He could not tell the day he had been accustomed to get his pay, nor his age, but when 35 was suggested to him he agreed. Asked to repeat his name, he said, "I cannot." Asked why, he said, "It is a funny thing, ain't it?" but after pressing a little he repeated his name, but had forgotten it immediately afterwards. He was unable to read even large letters in a spelling book or to write his name or copy words, but he could point out objects named to him, and recognize their uses when they were shown to him, though he could not tell their names, and seemed unable to repeat their names when they were told to him. He seemed worried by his inability, and evidently tried hard to do what he was asked, but complained that the effort made his head ache. On the 24th he is reported to have become excited and incoherent, and on the 28th his mental power was evidently failing. He did not seem able to understand what was said to him, and when asked how he was, said, "Two lots, Tuesday," and did not

seem in the least aware of the incongruity of the remark. On April 1st he was in a drowsy condition, which by the 3rd had deepened into coma, which was followed by death on that day.

Necropsy.

The *post-mortem* examination was performed by Dr. Douglas, whose report I summarize briefly here, omitting, as there is nothing important in them, the descriptions of all the organs except the brain.

Brain.—Meninges were normal, and there was no optic neuritis to be seen in the left disc. A large tumour occupied a considerable proportion of the left cerebral hemisphere measuring 2½ in. from before backwards, 2 in. from side to side, and 2 in. from above downwards. It involved the ascending parietal angular and supramarginal convolutions, these being much distorted and stretched by it. Its front part was degenerated into a large cyst, but behind it was solid, its lower part being haemorrhagic and dark red, and the upper a pale pinkish-white. It extended anteriorly as far as the fissure of Rolando; below it reached the lower border of the second temporal gyrus. It lay external to the lateral ventricle, being situated in the white matter of the parietal lobe. The grey matter at the lower extremity of the anterior limb of the supramarginal gyrus was much eroded.

The lesion here corresponds with the descriptions which have been for many years accepted. The tumour involved the ascending parietal, the angular and supramarginal convolutions, especially the angular gyrus, which is the visual centre that has been found to be affected in cases of word blindness. The patient was an intelligent man of fair education, but he was quite unable to read or recognize even the letters of the alphabet in a spelling book. Moreover, although there was no true paralysis, he could not write his name or copy words that were given to him, so that the graphic centre, which is probably closely related to the visual centre, was also affected. Writing, like drawing, depends upon the exercise of visual memory or the memory of form, and although this might be supposed not to apply to copying, yet we know it is by no means easy to induce a child to copy letters set before it, and our patient may be regarded as reduced to the level of a perfectly uneducated person who is asked to copy handwriting.

It is usually said that auditory memory is situated in the first temporo-sphenoidal convolution, but the patient heard and understood perfectly well all that was said to him. The characteristic of the case was the fact that although the patient could speak he talked nonsense, and was unable without great effort to repeat words when asked to do so, as, for example, to repeat his own name; yet what he said was clearly articulated and properly pronounced. This remarkable condition was due to the loss of memory of the greater part of his vocabulary from destruction of the centres concerned in originating the impulses for speech production. When a normal individual is asked to repeat a word this may be accomplished with more or less effort, which is great in proportion to the strangeness of the word, and by practice becomes easy and automatic, but where the centres concerned are damaged or destroyed it is difficult or impossible.

The association of motor aphasia with a lesion of the third left frontal convolution is called Broca's doctrine, and has been for the last thirty or forty years generally accepted by the medical profession, but a powerful protest has been in these later years made against it by Professor Pierre Marie.

Let me relate briefly the circumstances under which Broca announced his discovery: In 1808 appeared the work of Gall and Spurzheim on phrenology or the localization of the mental faculties in the brain; and in subsequent writings appearing between 1810 and 1822 Gall localized the centres of language in the supra-orbital lobes of the brain. According to his view, the development of this region tends to depress the eyes and make them prominent, so as to cause distension of the lower eyelids, and it is said, although this may not be true, that Gall had been led to this opinion by the garrulity of one of his schoolfellows who had this defect. However derived, the doctrine of the localization of the faculty of language in the anterior lobes of the brain was adopted and supported by Professor Bouillaud in a series of memoirs produced at the Academy of Medicine in Paris. The first was read in 1825, and was entitled "Clinical Researches to demonstrate that the Loss of Language corresponds to a Lesion of the Lobules of the Brain, and to confirm the opinion of Gall on the seat of the organ of articulated language." In this paper he maintained the existence of a special distinct and independent centre in the brain for the movements of the organs of speech, and he localized it in the anterior "lobules." He distinguished loss of the faculty of speech from that of the movements of the tongue and lips.

These doctrines did not pass without criticism from such eminent persons as Cuvier, Flourens, and Gratiolet. Andral in his clinical lectures, published in 1834, drew attention to the coincidence of affections of speech with right-sided hemiplegia, and localized the lesion in the left corpus striatum and attacked Bouillaud's doctrine. He had collected altogether 37 cases of various lesions of the anterior lobes of the brain, of which 16 showed no disturbance of speech, while, on the other hand, 14 cases of disturbance of speech were without alteration in this region. From time to time Bouillaud returned to his subject, and his persistence, joined to his great authority as a physician, as a clinical teacher, and as Dean of the Faculty of Medicine, invested his views with no mean authority. In 1861 Broca was Secretary of the Society of Anthropology and surgeon to Bicêtre. Bouillaud in 1848 had offered a prize of 500 francs to any one who would produce a single case of an individual who had lost his speech without presenting a lesion of the anterior lobes of the brain, and this prize had never been claimed. In April, 1861, Broca having received at Bicêtre the patient Leborgne, asked Auburtin, Bouillaud's son-in-law, to examine him, and shortly after was able to present to the Society of Anthropology notes of the case and the brain. This showed considerable softening of the anterior lobe of the left hemisphere, but the lesion was extensive. He spoke of the loss of language as "aphemia," and defined it as a condition in which, while "the general faculty of language persists unaltered, where hearing is intact, where all the muscles except those of the voice and articulation obey the will, articulate language is abolished in consequence of a lesion of the brain." "All that is wanting in these patients is the faculty of articulating words." "They understand all that is said to them; they are intelligent, they can emit vocal sounds with facility, and execute with their tongue and lips all the movements which are required for the articulation of sounds, and yet they are unable to express themselves in language beyond, perhaps, a short series of syllables or a monosyllable." He goes on to say that the seat of the lesion was in the second or third frontal convolution, most probably in the last; it is therefore possible that the seat of articulate language is in one or other of these convolutions.

Shortly after this Broca had an opportunity of making a *post-mortem* examination upon another aphasic patient, and, to his astonishment, he says the lesion "occupied rigorously" the same seat as in the first case, and he regarded this coincidence as confirming the seat of the lesion. In 1863 Parrot showed the brain from a case in which there was complete atrophy of the right island of Reil and of the third right frontal convolution, with complete preservation of intelligence and the faculty of language; a case which led Broca to modify his views so far as to restrict the localization to the left side of the brain. By 1865 Broca had come to regard his doctrine as a dogma which could not be disputed, but he availed himself of the suggestion that in a certain number of exceptional persons the faculty of language was seated in the third right frontal convolution, in order to explain such an observation as that of Moreau of Tours, who was able to show the brain of a woman aged 47 who had never presented the slightest trace of aphasia, in spite of the extensive destruction of the third left frontal convolution!

Left-handedness and the power of the opposite hemisphere to become educated to supply the place of the damaged left centre sufficed to explain all the contradictory cases published from time to time, and in spite of abundant evidence of the existence of lesions of the third left frontal convolution without affection of speech the doctrine became accepted by Trousseau and Charcot in France, by Hughlings Jackson, Bastian, and Broadbent in England, and by Seguin in America; it was introduced into all textbooks, and has existed triumphantly to the present day. The other main fact to be remembered in the history of aphasia is that in 1874 Wernicke drew attention to a type of aphasia differing from that of Broca, in which the patient retains the power of speaking, although he has lost to a considerable extent the memory

of words, his conversation is incoherent, and of the kind which has been called jargon-aphasia. The lesion in these cases was localized by Wernicke in the first left temporal convolution, and this doctrine has, with the inclusion of the supramarginal gyrus and the angular gyrus, held its ground. This area of the brain is the seat of the cortical centres for visual and auditory memory. Wernicke's paper led to the separation, now generally recognized, of aphasia into two types, ataxic or motor and amnesic or sensory aphasia, the orthodox view being that the former is localized in the third left frontal convolution, and the latter in the first temporo-sphenoidal, the supramarginal and angular gyrus of the left hemisphere.

Ataxic aphasia is met with clinically most commonly in association with right-sided hemiplegia, and the condition of the patient is usually unfavourable to any careful or detailed investigation of his mental condition. The paralysis of the right arm makes it impossible for him to write, and his power of communicating by gesture is limited, but it is admitted that in most of these cases there is some mental defect, and that they are not simply cases of loss of power of speech, all other functions of the brain being intact. Most of the cases of aphasia in which a lesion of the third left frontal convolution has been observed have been caused by embolic plugging of the left middle cerebral artery at such a point that not only Broca's convolution but a considerable part of the brain is involved.

The extensive character of the lesions and the complexity of the symptoms have made it difficult to test the truth of Broca's doctrine. But the doctrine was assisted by the experiments of Fitz and Hitzig, Ferrier and Yeo, Horsley and Schaefer, who place the centres for the movements of the lips, mouth, and tongue in this region of the brain; these discoveries caused Charcot to overlook the cases he had reported in opposition to Broca and to accept the now popular opinion.

There is no doubt that the almost universal acceptance of Broca's view was due to its fitting in with the then prevalent philosophy; opposing facts were passed over, and even such a sound observer as Hilton Fagge explained those where "the third left frontal convolution may fail to present any obvious morbid change" as being due to some "unrecognizable interference with the blood supply." Broadbent[1] and Fagge were such stout supporters of Broca's theory that after Wernicke's paper appeared they would not admit any other form of aphasia than that connected with the third left frontal convolution. We are generally told that the explanation of the association of right-sided hemiplegia with aphasia is due to the fact that the left side of the brain is the more educated, or, to use Hughlings Jackson's picturesque expression, "the left side of the brain is the elder brother." The main argument for this is that in left-handed people, in whom we may believe that the right side of the brain takes precedence, left-sided hemiplegia is associated with aphasia. A good example was published by Dr. Wadham in the *St. George's Hospital Reports* for 1869. The boy was ambidextrous, but there was a good deal of evidence that he was really left-handed, and that his ambidexterity resulted from his having taught himself to use his right hand later. This boy could not speak, but could write and spell correctly; he was re-educated to speak to a certain extent, and then died. At the *post-mortem* examination both third frontal convolutions were healthy, but the right island of Reil was destroyed.

Professor Marie is the Director of the great asylum of Bicêtre in Paris, which is for male patients what the Salpêtrière, where Charcot made his reputation, is for women. He has occupied this position for ten years, after having been Charcot's principal assistant at the Salpêtrière, and he is probably well known to most of us as the discoverer and describer of acromegaly and of the allied condition, osteo-pulmonary arthropathy. At Bicêtre he has studied no fewer than 100 cases of aphasia, of which he has been able to follow 50 to the *post-mortem* room, so that he speaks on no narrow basis of facts.

Professor Marie's view is that Wernicke's aphasia or sensory aphasia is the only true aphasia; that the loss of speech associated with right-sided hemiplegia should be called anarthria, and is a true motor paralysis which has nothing whatever to do with Broca's convolution. He localizes it in the part of the brain which is bounded externally by the convolutions of the island of Reil, internally by the lateral ventricle, and anteriorly and posteriorly by lines drawn at right angles to the extremities of the convolutions of the island of Reil. When the lesion is limited to this space it causes only anarthria, where it extends further forward it produces no known extension of the symptoms, but if it extends backward it involves those intellectual centres a lesion of which causes sensory aphasia; under these conditions a mixed affection results, that is to say, anarthria *plus* more or less sensory aphasia, and it is to this type that most of the cases of Broca's aphasia belong. Professor Marie would therefore describe three conditions: (1) Pure anarthria, (2) anarthria *plus* a certain amount of aphasia, and (3) true aphasia or sensory aphasia.

Under the auspices of Professor Marie, Dr. Moutier has published (*L'Aphasie de Broca*, Paris, 1908) a complete account of the whole literature of aphasia, giving an analysis of all the cases that have been recorded. From these he has collected 27 examples in which the third left frontal convolution was alone involved, but in which no aphasia occurred; of these, 4 were traumatic, 2 were surgical resections, 14 were tumours, 5 softenings, and in 2 there was bilateral softening of both third frontal convolutions. The two cases in which there was destruction of both third frontal convolutions seem to me to be absolutely inconsistent with the orthodox doctrine of localization. They cannot be explained by any supposed right-handedness or supplementary education, and are therefore worth quoting briefly.

The first, published by Echeverria, was an epileptic aged 67, who was able to speak up to his death, although there was from time to time transitory trouble in his speech. At the autopsy both third frontal convolutions were atrophied.

The other was a case published by Comte in 1900: The patient was a working jeweller, aged 51, who at the age of 31 had an epileptiform attack, which was followed by transitory right-sided hemiplegia with aphasia. The hemiplegia disappeared but the difficulty of speaking remained. He spoke continuously, but he presented disorder in the articulation of his words, in deglutition, and in mastication from slight paralysis of the masticating muscles of the lips and tongue, such as are generally called pseudo-bulbar symptoms. At the *post-mortem* examination, on the left side of the brain there was atrophy and sclerosis from chronic encephalitis of the whole of the third frontal, of the lower half of the ascending frontal and ascending parietal convolutions, and of the first temporo-sphenoidal. On the right side there was atrophy of the foot of the third frontal, of the lower half of the ascending frontal, and of the ascending parietal.

The surgical resections were two cases presented by Burckhardt to the International Congress at Berlin in 1890, and are to be found in the *Transactions* of the Congress, and also in the *Zeitschrift für Psychologie*, 1891, p. 463. In both cases the third left frontal convolution was excised in the hope of removing or diminishing verbal hallucinations from which the patients, who were lunatics, were suffering. In neither case did motor aphasia result.

The first patient was a young painter, right-handed, aged 26, who suffered from auditory hallucinations, and the operator suggested that the centres of language of Wernicke and Broca might be excised. At the first operation he removed the posterior part of the first and second left temporo-sphenoidal convolutions; after this the patient spoke little and the auditory hallucinations diminished. There was no trace of verbal deafness. Some days afterwards there was slight hesitation in speaking, but this disappeared. The following year there seemed to be a relapse in his condition, so Burkhardt resected the third left frontal. As the patient was coming out of the chloroform he said, "Listen"; at no time did he show any ataxic aphasia.

The other case was a woman aged 51, right-handed; the operation was performed for a similar condition. At the first operation he removed part of the left superior parietal and the supramarginal gyrus; after the operation there was temporary incomplete hemiplegia in the left side. In the second operation the lower part of the first and second left temporo-sphenoidal convolutions were removed. Two months afterwards the third operation was performed, and he removed part of the superior parietal, the supramarginal gyrus, and the angular gyrus. There was no interference with speech after this operation. The patient was constantly talking. At the fourth operation he removed the third left frontal convolution; she recovered from the operation without at any time showing defect of anguage.

A remarkable case, published by Professor Pierre Marie

and Dr. Moutier, is that of an old man aged 64, who died at Bicêtre under their care.

He had been admitted for mitral disease and bronchitis, and there can be no doubt that language was quite unaffected. Moreover, he had always been right-handed. He died on December 11th, 1906; on the 2nd of that month he complained of a little numbness and weakness of the right hand, but there was no hemiplegia nor any Babinski's sign. There had been nothing to attract attention to the brain, which was only being examined in accordance with their rule of making a thorough autopsy of all cases, and this is what they found: In the left hemisphere the foot of the third frontal convolution was very distinctly atrophied in comparison with the foot of the right third frontal. Moreover, a "worm-eaten" patch had destroyed the grey matter of the upper half of the posterior branch of the cap and of the superior third of the foot of the third left frontal.

The published photograph[3] shows better than any description the extent of the lesion, and is almost an exact copy of the lesion shown in the plate published by Tuke and Fraser[2] in the account of their case. It differs from Tuke and Fraser's case in there never having been any disturbance of the faculty of language.

It is difficult to see how it is possible to escape from the amount of evidence brought forward to show that destruction of the third frontal convolution, even on both sides, does not cause aphasia; but almost equally cogent, and even more abundant, is the evidence that aphasia occurs in cases where this convolution is intact. The usual answer in this evidence is that while it may appear intact, it is not so really; but Professor Marie has lately published three cases of this kind in which the convolution was examined microscopically by serial sections without any lesion being discovered. The only rejoinder that the supporter of Broca can make is that the lesion is functional in character, and reveals itself by no changes which can be detected by our present means of research. But those who make this assertion must bear the onus of proof, and it is not easy to produce evidence in its favour. If the convolution of Broca is the seat of the faculty of language its destruction should be invariably followed by loss or impairment of that faculty; further, when there is loss or impairment of the faculty of language this convolution should show always some demonstrable change; if neither of these relations exist, then the only possible verdict must be that the existence of the supposed relation is not proved.

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[1] BRITISH MEDICAL JOURNAL, 1876, vol. i, p. 433. [2] *Journal of Mental Science*, vol. xviii, p. 46. [3] *L'Aphasie*, p. 397.

TWO CASES OF HEREDITARY CONGENITAL WORD-BLINDNESS.

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AT the Exeter meeting of the British Medical Association in 1907 I read a paper[1] in the Section of Ophthalmology on four cases of congenital word-blindness occurring in the same family. Dr. C. T. Thomas[2] in a paper in the *Ophthalmic Review*, in August, 1905, had already called special attention to the fact that congenital word-blindness may assume a family type and that a hereditary tendency is probable. I recorded the four cases in one family as a confirmation of the correctness of this observation. The two cases I am about to record are a still further confirmation of the hereditary tendency, as they occur in the second generation of the same family which afforded the subjects of my communication to the British Medical Association in 1907.

The four cases previously reported were the youngest members of the family. The two cases in the present paper are the children of the oldest daughter of the same family, and hence are the nephew and niece of the cases previously reported. The mother of these two children never herself experienced any difficulty in learning to read. She has six children and the other four members of the family have learnt to read without any special difficulty.

A., a girl 12 years of age, has been at school for seven years. She has experienced the greatest difficulty in learning to read, and at present can only read very imperfectly, being able to recognize by sight only some of the commonest monosyllabic words. For several years she seemed to make very little progress, but has done much better during the last year. She knows all the letters of the alphabet, but was a very long time in learning them. She can recognize by sight most of the common words of one syllable, such as *the*, *of*, *in*, *are*, *which*, *to*, *with*, and so on, but most of the rarer monosyllabic words she cannot recognize by sight alone, although she recognizes them nearly all at once when spelt out aloud to her. She recognizes by sight scarcely any words of more than one syllable, but many of these she also recognizes, if they are spelt out aloud to her. She has never had the slightest difficulty with arithmetic, and in fact has been rather good at it and above the average. She is at present in the compound rules, and has no difficulty in keeping up with the rest of the class in this subject. She has no difficulty in committing things to memory, and seems a sharp, intelligent girl in every other respect.

D. is a boy aged 10 years, and has been at school for four years. He has made very little progress in learning to read by sight. He does not know by sight all the letters of the alphabet, although he can repeat them correctly in sequence. He can scarcely recognize any words by sight. Out of a whole page of a child's primer he recognized by sight only two words, *to* and *go*. When I spelt the words out aloud to him and appealed to his auditory memory he recognized every word on the page. He can spell nearly all the small words, and can recognize them when they are spelt aloud to him, but he cannot recognize them by the sense of sight alone. Whilst the visual memory for words is so defective the auditory memory seems good. He has therefore experienced no difficulty in committing things to memory which have been read aloud to him, such as pieces of poetry. With regard to arithmetic he has had the same difficulty as with regard to reading. He can repeat the figures in sequence up to "100," and can write them also. But if the figures are written down separately he can only recognize them with certainty up to "20," and very few combinations after that.

In other respects than learning to read and count, he seems quite a smart intelligent boy.

The first case, that of the girl, does not call for any very special remark. It is a typical case of abnormal difficulty in registering in the brain the visual symbols of letters and words. The degree of difficulty in this case, however, has not been nearly so great as is met with in many cases. The difficulty, of course, varies greatly in degree, some cases being comparatively mild, and others where the difficulty is so great as to seem at first insuperable. The girl's case is a mild case, because she has now, after seven years of teaching in the ordinary way, acquired the visual memories of the most common monosyllabic words. I have seen and recorded cases where, after seven years of ordinary training, the child had practically acquired nothing so far as the visual memory of words and letters is concerned. The case of the girl may be regarded as a mild case of congenital word-blindness, and if now taught in the proper way, I am certain will soon be able to read quite well.

The second case, that of the boy, is of a much more severe type. Here the difficulty has been much greater than in the case of the girl, as, after four years' similar training, he has acquired scarcely any visual memories of words or letters, not even recognizing by sight all the letters of the alphabet. An important point in his case is that he has experienced the same difficulty in dealing with figures. This is in contrast to his sister, and also in contrast to the four cases which I reported in 1907, none of whom experienced any difficulty with arithmetic and some of whom were above the average at it. When this difference exists, it is helpful in the diagnosis.

In my book[3] on letter, word, and mind blindness I have shown from the study of cases of acquired word-blindness that the visual memory for words and letters is completely independent of that for figures, and hence in congenital word-blindness it is not surprising that whilst the visual memory for words may be very defective, that for numbers may be perfectly normal.

In my last paper[1] I remarked, in discussing this subject, that too much importance in the diagnosis should not be assigned to the relative difference in acquiring the visual memories of words and figures, as cases had been reported where the difficulty extended to both figures and words. The case now under consideration affords confirmation of this observation. It is a typical case of congenital word-blindness, where the difficulty also extends in equal degree to figures. Nor should the occasional occurrence of this

combination surprise us, since we know that the cerebral areas utilized for the storage of the visual memories of words and figures, though distinct, are close together, and hence may be sometimes simultaneously involved, as in the present case.

In the discussion that followed the reading of my paper on hereditary congenital word-blindness at the Exeter meeting in 1907, Mr. Sydney Stephenson narrated a striking example of six cases of congenital word-blindness affecting three generations of one family, which he subsequently published.[4] Mr. T. Herbert Fisher[5] also published a case of congenital word-blindness, and in his paper called special attention to the fact that the uncle of the child had also experienced the greatest difficulty in learning to read. The evidence is thus gradually increasing as to the hereditary tendency in congenital word-blindness. I have little doubt that in future, if observers in every case would make careful inquiries into the family history both of the present and previous generations, the evidence would rapidly increase as to the frequency of this hereditary tendency.

The fact that congenital word-blindness is sometimes hereditary, as is typically exemplified by these six cases occurring in two generations of the same family, is of some importance from the etiological standpoint. In my paper on congenital word-blindness at the Oxford meeting of the British Medical Association in 1904,[6] I said that in these children their difficulty in learning to read can most readily be explained on the ground of some defect in the special area of the brain, generally the left angular gyrus, where are stored the visual memories of words and letters, and that if there be any abnormality within this area, due either to disease, to injury at birth, or to faulty development, it was easily conceivable how such children should experience abnormal difficulty in learning to read. In these six cases belonging to the same family and other hereditary groups it is evident that the abnormal condition of the visual memory centre is a matter of faulty development, and it is probable that in most cases of congenital word-blindness the condition is the result neither of disease nor injury at birth, but of defective development of this definite cerebral area occurring in the early stages of embryonic growth. This view, that congenital word-blindness is the result of faulty development and not of disease or injury, derives considerable further support from the fact that homonymous hemianopsia, which is so frequently associated with acquired word-blindness, has never been met with in any case of congenital word-blindness. In a paper of mine on word-blindness with right homonymous hemianopsia[6] I discuss the reason for the frequency of this combination, and have in my own experience met with five cases of acquired word-blindness associated with right homonymous hemianopsia. The fact that this association, so frequently observed in acquired word-blindness due to cerebral disease, has never yet been met with in the congenital form is important and significant.

With regard to the future of these two cases of congenital word-blindness, I have no doubt that both children can be taught to read. In the case of the girl, she has already, although very slowly, made definite progress, and this will be much accelerated if she is taught in the proper way. Even in the case of the boy, where little progress has been made after being four years at school, I am certain he can be taught to read if the task be undertaken in the proper way and with sufficient persistence and perseverance. For my views on the proper method of teaching these cases I would refer to my two previous papers on this subject in the BRITISH MEDICAL JOURNAL.[1 6]

Of the many cases of congenital word-blindness which I have seen all have ultimately been taught to read. But it is to be observed that by congenital word-blindness I mean pure cases, where this defect exists alone in an otherwise healthy and normal brain. Cases of inability to learn to read associated with general defective intelligence and defect of other cerebral centres belong to quite another category, and in such cases the prognosis is not so hopeful.

Pure congenital word-blindness, which is a local affection of a limited cerebral area, can always be overcome by perseverance and proper methods of education, and herein lies the great importance of the recognition at an early period of the true character of such cases.

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AN EPIDEMIC OF INFANTILE PARALYSIS IN BRISTOL.*

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THE spread of infantile paralysis in an epidemic form during the last few years over a great part of Europe and America has been so extraordinary, and the outlook for the future is so serious, that I need hardly apologise for bringing before you the facts of an outbreak in Bristol from June, 1909, to January, 1910. It is one of the first which have occurred in England. W. W. Treves reported a group of 8 cases in 1908, and in 1910 some 13 were recorded at Maryport. The cases which I have collected by the kind help of friends and colleagues number 37. I have seen nearly all of them myself, and examined their present condition. If the numbers are small compared with those of some foreign epidemics, they are, I think, quite enough to show that we have more than the sporadic form of the disease to deal with. Happily we have not yet reached the condition of the United States, where Flexner estimates that 20,000 cases occurred during the last summer.

I could find hardly any cases here in the first months of 1909. In June 5 appeared, and 27 more by the end of October, leaving 5 only during the next three winter months. The usual time is during the three summer months, and it is curious that our attacks should go on past mid-winter. The summer, too, had been cold and wet with us.

The age of the patients varied from 4 months to 16½ years, giving an average age of 3 years, or if we omit three adolescents the average age of the rest was almost exactly 2 years. There were 24 males and 13 females.

Gowers has remarked that in the epidemic, as distinct from the sporadic, type there are a considerable number of complete recoveries without paralysis, that the mortality is considerable, perhaps 10 or 12 per cent., because fatal bulbar and cerebral attacks are recognized as due to this disease, and that adults suffer as well as children. As our statistics were collected after the outbreak, and as public attention was not directed to poliomyelitis at the time, it is probable that most of these abnormal cases were overlooked. I have not included in my list any cases where paralysis was absent throughout. On the other hand, I cannot point to any absolutely complete recovery, though three or four are practically well. The great majority are more or less crippled for life. Two patients died, a mortality of nearly 6 per cent.

Most of the children had a febrile attack before or immediately after the onset of paralysis. In about a quarter of them pains of a rheumatic character are recorded. In one child the knee was kept flexed for some days as if from joint pain, a symptom which I have seen before. Some had pain down the spine, and in two retraction of the head was noticed, which might lead to the diagnosis of meningitis. Facial paralysis occurred in No. 21. In view of Flexner's suggestion that the entrance of the infection is often through the naso-pharyngeal membrane, we may remark that tonsillitis appeared in two cases, Nos. 36 and 37, and pulmonary troubles in several, such as Nos. 8, 20, and 25, whilst in three there were symptoms of measles—Nos. 15, 24, 36. How far the latter were real attacks of measles, which predisposed the patient to the infection of poliomyelitis, or merely symptoms of the latter disease, it is hard to say.

On the other hand, there were half a dozen children who were suddenly paralysed while apparently in perfect health—for example, 7, 11, 14, 21, 22, 31, 32. In others the history of a previous fall or blow was recorded. The importance of this is problematical. In one, the details of

* Read before the Bristol Medico-Chirurgical Society, January 11th, 1911.

which are absent, the attack came on after a surgical injury.

The question of how the infection is conveyed is an important one. There can be no doubt whatever of the existence of a transferable virus, since it has been conveyed to thirty or forty monkeys in succession, reproducing all the symptoms of the disease. The germ is ultra-microscopic, and can be obtained from the spinal cord of either a sporadic or epidemic case. But, as Flexner says, it is necessary to bring it into direct relation with the central nervous system; and the remarkable thing in most outbreaks is that while instances of direct contagion and of carriage by healthy persons are common, the vast majority of contacts show no symptoms. Whether this is due to insusceptibility, numerous abortive attacks, or to difficulties of the entrance of the organism, is not clear.

In different epidemics infectiousness varies enormously. In Sweden, at Trostëna, the infection of otherwise isolated families was clearly traced to a school. In Nebraska, Holt says there were six families with 2 children each attacked, five with 3, three with 4 cases, and one with all the 6 children in the house struck down. A boy was attacked nine days after the return of his mother and brother from a house in another town, in which house a child was suffering from it. On the other hand, at Vorpommern, in 51 cases with a 17 per cent. mortality, no case could be traced to any other. In some places instances of the long duration of infection in persons or houses seem clear. Indeed, the Massachusetts report for 1909, which is perhaps the most careful and minute of any, mentions "for what it is worth" eleven instances where the disease followed intimate contact with old cases of infantile paralysis often of several years' standing.

In Bristol there was one family of eight children in which a boy was attacked severely and taken to the Royal Infirmary. The very next day a sister, who had had some previous bronchial trouble was found to be paralysed too. The other children seemed to have escaped. Again, Cases 1 and 31 were living a few doors from one another, but one was attacked in July and the other in November. So, too, Cases 3 and 8, where the attacks came on in September and December. In the great majority of the children no connexion with other cases has been established. Thirty-four of them lived in an urban area stretching across the southern part of the city, and three in outlying districts. Most of them were treated by massage and electric baths at the Royal Infirmary, the General Hospital, and the Royal Children's, and the Orthopaedic Hospitals.

CASES OF INFANTILE PARALYSIS IN BRISTOL, JUNE, 1909, TO JANUARY, 1910.

1. R. D., 2 years and 6 months, male, Lincoln Street, Barton Hill, was attacked in November "with fever and vomiting, but no convulsions," and on the third day was *paralysed in the left leg*. There was no pain at any time. He can now (November, 1910) move the thigh and leg feebly, and to-day for the first time the toes are seen to be moved. The entire limb is wasted and the foot still cold and red. There is no knee-jerk on the left side. He lived a few doors from No. 31. (Attended at Bristol General Hospital.)

2. K. W., 2 years and two months, male, Park Terrace, School Road, Totterdown, was in good health till suddenly on August 25th *great weakness in the right leg* came on. After this he became feverish, his head ached and could not be lifted from the pillow. He complained of pains all over for fourteen days. There was retraction of the head, but no loss of consciousness. The right thigh, leg, and foot were paralysed. He can now support himself upright for a few moments, and swing the right leg to and fro, but he has talipes calcaneus. There is no knee-jerk on either side, and the left foot also is cold and bluish. (Attended at Bristol General Hospital.)

3. H. R., 13, female, Victoria Avenue, Redfield. The eldest brother died of pernicious anaemia six months before, all the other children were in good health. She was attending school and had recently passed an examination. On September 13th had pains all over which lasted for a week, and on the 15th was *paralysed all over* both in limbs and trunk. This passed away except as to the left thigh and right foot, which were wasted and very feeble. There is no knee-jerk on either side. She lived a few doors from No. 8. (Attended at Bristol General Hospital by Dr. J. M. Clarke.)

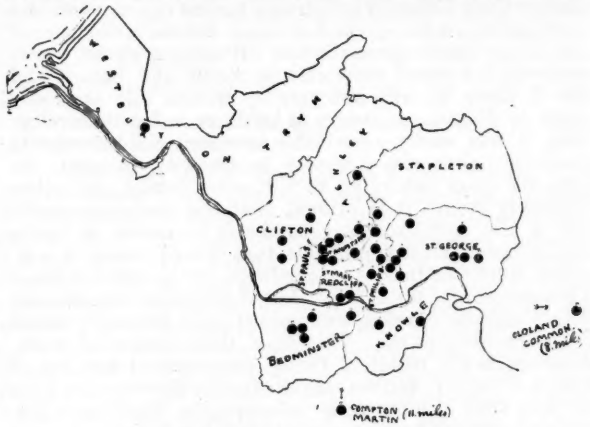
4. F. S. M., 1 year and 3 months, male, Phœnix Street, Barton Hill, fell out of his mail-cart one day in June, and two days later was feverish and started in his sleep. The next day *complete paralysis of the right thigh and leg* came on. He then slept for two days and nights and finally lost the use of the right arm also. The arm is now strong and the leg has regained some power. He can walk a little alone. The peronei are still very feeble, the leg is blue and wasted, and there is no knee-jerk on that side, though it is present on the left. (Attended at Bristol General Hospital.)

5. A. M., 16 years 6 months, male, Clifton, was attacked with fever (temperature 104°) on October 10th. Next day the temperature fell. For a week he had slight pains in his limbs, but went to school. On October 17th severe pain came on in the head and neck and *paralysis of the left arm*. The reflexes in this arm disappeared, but sensation was normal. There was no optic neuritis, but photophobia and epistaxis. On the 18th paralysis of the shoulder muscles of the right arm came on, and on the 22nd death from respiratory failure—that is, bulbar paralysis. (Reported in the *Lancet* by Dr. Symes.)

6. D. G., 2 years 8 months, female, Richmond Park Road, Clifton. On January 14th, 1910, had headache and fever, and on the 16th was attacked by *paralysis in both legs*, with some pain. Afterwards the paralysis in the right leg below the knee became absolute, with the exception of some movement in the toes. Knee-jerk absent. The paralysis almost entirely passed away after some months, but the limb remained cold and wasted for a long time. For a while she suffered from pavor nocturnus and mental irritability, but she is now in fairly good health. (Attended at Bristol General Hospital by Dr. Parker.)

7. W. H., 2 years 5 months, male, South Road, Bedminster, was attacked on June 19th. The only symptom was weakness, and then complete *paralysis of the right leg*. There was no fever or other illness. He had always been in good health previously. The leg gradually improved, and he can now walk alone fairly well. The limb below the knee is red, wasted, and feeble. Knee-jerk little or none in either leg. (Attended at Bristol General Hospital.)

8. H. L., 1 year 2 months, male, Victoria Avenue, Redfield. Had no previous illness, but on December 11th was taken ill with fever (temperature 102°), pains in the head, and pulmonary symptoms. Continuous sweating was a marked symptom, and



Map of the City and County of Bristol.

on December 22nd flaccid *paralysis of all four limbs* was noticed. There was a gradual recovery of power, but the muscles were wasted for some time. The knee-jerks were absent. This patient lived a few doors from No. 3. (Attended by Dr. Alexander.)

9. A. G., 2 years 10 months, male, Tennyson Terrace, Speedwell Road, St. George. In October he was found to be feverish, and complained of pains in the limbs. The head was retracted, and the *left leg became paralysed*. In December, 1910, the left thigh, buttock, and leg were still wasted, and the muscles flaccid; the colour was normal, but till lately it was blue. The patient could just move two toes, but could not walk, even with crutches. (Attended by Dr. Foss, and at Bristol General Hospital.)

10. M. E., 1 year and 3 months, female, Stanley Terrace, West Street, Bedminster, was found to be feverish on June 23rd, and on the next day *the left leg was paralysed*. Later on the absence of the knee-jerk and of the reaction to faradism was noted. The foot could not be dorsiflexed, and there was no plantar reflex. The whole limb still remains cold and atrophied. Patient can walk very fairly, but the foot turns out nearly to a right angle. (Attended at Bristol General Hospital by Dr. Coombs.)

11. W. J., 2 years and 7 months, male, St. Luke's Road, Bedminster, early in August was found to have *partial paralysis of the right leg*. The knee was at first contracted; no fever was apparent. He was admitted to the General Hospital and gradually improved. At the present time the thigh and leg are somewhat atrophied, but the knee-jerk is present and the patient walks very well. (Attended at Bristol General Hospital by Dr. Neild.)

12. F. H., 1 year, male, Cathay, Redcliffe, fell out of bed and bruised his left knee in the first week of September. No febrile attack was noticed. About September 19th, sudden *paralysis of the right leg* appeared. He had always been strong and hearty. Present state cannot be learnt. (Attended at Bristol General Hospital by Dr. Neild.)

13. E. W., 2, male, Victoria Avenue, Horfield, complained of pains all over on August 4th, and was found to be shivering. This went on for three weeks. About August 25th *paralysis of the right leg* was noticed. He recovered some power so as to be able to walk a little by October. There was no knee-jerk in

either leg, and the right quadriceps femoris was wasted. The leg remained cold, and the foot dragged in walking. (Attended at Bristol General Hospital.)

14. A. C., 4 months, male, Dean Terrace, Moorfields, was attacked in August by *paralysis of the left leg*, but retained the power of moving the toes. There had been no fever or diarrhoea observed. When seen by a doctor there was wasting and absence of the knee-jerk. In November, 1910, the entire leg and thigh were wasted, but not cold. He had foot-drop, but could walk two or three steps. The knee-jerk was present in both legs. (Attended at Bristol General Hospital by Dr. Neild.)

15. R. O. C., 1 year, male, Beaufort Street, Stapleton Road, suffered from an attack of "German measles" in September. Fourteen days later he was attacked with *paralysis in all four limbs*. The right leg was most affected, the left leg less so, and the hands least of all. The back muscles were also enfeebled. He now has complete use of his hands, moves both legs to and fro, but cannot stand. There is no knee-jerk present. His mother died from a tumour of the brain. (Attended at Bristol General Hospital.)

16. F. J., 4 years, male, Shepherd Street, St. Philips, became feverish July 24th. This lasted four days, and was followed on July 28th by *paralysis of the right leg*. In September he was found to have the limb cold and wasted; foot dragged in walking; dorsiflexion of foot and toes very feeble, but the knee-jerk was present. (Attended at Bristol General Hospital.)

17. A. P., 2 years and 6 months, female, Sandown, Brislington, was feverish for a week from June 24th, and complained of pain in the hip. About June 30th the *left leg was paralysed*. This gradually lessened, and she can now run about with a limp. The buttock and thigh are cyanotic and wasted; knee-jerk feeble; the peronei and common extensors of the toes are very weak. (Attended at Bristol General Hospital.)

18. G. O., 1 year and 10 months, female, Colston Street, Cathay, Redcliffe, was found to be feverish on August 17th and *partially paralysed in both legs*. Admitted August 19th. Temperature 101°. Could stand with difficulty and could not walk. Right leg was the worse; knee-jerk not present on that side, but normal on the left. Plantar reflex absent on right and extensor on left. August 20th: Temperature 98.4°. Later on the right leg atrophied below the knee. She now walks fairly well, but the foot turns outwards. Knee-jerks are active on both sides. There is no blueness of the skin. (Attended at Bristol General Hospital by Dr. Parker.)

19. E. B., 12 years, male, Bedminster, was attacked in August and the *right shoulder was paralysed*. In September wasting of the shoulder girdle was found to have taken place. No details could be obtained. (Attended at Bristol General Hospital.)

20. T. D., 1 year and 3 months, male, Pearl Street, Bedminster, was attacked in August with vomiting, fever, and "pneumonia," which lasted six weeks. *Paralysis of all four limbs*. This gradually improved till in seven months he could stand with a little help. There was then complete paralysis of the extensors of the right foot only, with loss of the faradic reaction. The calf and other muscles were wasted; the leg was still cold and discoloured, and there was no knee-jerk on either side. (Attended by Dr. Murray Smith, and at Bristol General Hospital.)

21. J. W., 4 years, female, Henry Street, Barrow Street, had always good health till in August sudden *weakness in both legs*, especially the left, came on. There was no fever or diarrhoea; left facial paralysis was also noted but this cleared up. When seen in 1910 she could walk fairly well, but both legs were wasted to a marked degree and very cold but not discoloured. The knee-jerk was then present on both sides but no clonus. (Attended by Dr. Finzel.)

22. B. J., 7 months, female, Penpole Place, Shirehampton, had no previous illness and no feverish attack at the onset. In September the *left leg became partially paralysed*, was flaccid, and began to waste. At the present time the leg is wasted and the foot cold; knee-jerk present on both sides. (Attended by Dr. Burd, and at Bristol General Hospital.)

23. C. J., 3 years 3 months, male, Hillside Road, St. George, was said to have been attacked with fever and rheumatic pains in August, and then *paralysis of all four limbs and back*. The right leg seems to have been most affected, and showed the reaction of degeneration; knee-jerks were absent on both sides. (Attended by Dr. Blagg, Orthopaedic Hospital, and at Bristol Royal Infirmary.)

24. E. K., 1 year 8 months, Silver Street, City, was attacked with running at the eyes and nose and fever on September 10th. The next day the *right leg was completely paralysed*, and the patient could not sit up, and complained of pain in her back. There was gradual recovery, but for eight months she could not walk. The limb is still wasted and bluish, and the foot turns out; no knee jerk is present though active on the left side. (Attended by Dr. Maddison.)

25. E. M., 1 year and 10 months, female, Dove Street, Kingsdown. In July had diarrhoea and then bronchitis. Her brother was attacked on August 7th, and on the 8th her *right arm and leg were paralysed*. Gradual improvement took place, and in November, 1910, she could stand up with assistance, but both ankles gave way in the attempt. The right thigh and leg were wasted, cold, and paretic, and the knee-jerk absent. The arms were normal, except that the forefinger of the right hand generally remained flexed when the others were extended. When lying down the foot-drop on both sides was very marked. (Attended at Royal Children's Hospital by Dr. Lavington.)

26. W. M., 2 years and 8 months, male, Dove Street, Kingsdown, was at play on August 2nd, and fell and knocked his head. He said that he felt giddy, his eyes twitched, he vomited twice, and remained unwell. On August 7th he was *paralysed in every limb*, and was admitted to the Royal Infirmary; temperature 97°, pulse 120, lungs full of râles. Complained of pain in the neck, and the head fell back and to the left side, if not supported. Fundi oculi normal; pupils reacted to light and accommodation; Kernig's sign absent; no knee-jerk obtained. Plantar reflexes both extensor. Shoulder and upper arm muscles on both sides, except left triceps, showed reaction of degeneration when tested. Movement of arms and legs very feeble; no loss of sensation. He slowly improved, and is now able to run about, and shows little trace of his illness. The arms recovered more slowly than the legs, and the neck last of all. There were six other children in the family besides this boy and his sister. (Attended at Bristol Royal Infirmary by Dr. Nixon.)

27. L. M., 2 years and 6 months, female, John Street, Mina Road, was suddenly *paralysed in the left leg* about September 25th. This was discovered in the morning when she got up. She was feverish, and after a week was admitted to the Royal Infirmary. At the present time the leg is wasted and cold, and there is no knee-jerk on that side. She walks with difficulty, and cannot dorsiflex the foot. (Attended at Bristol Royal Infirmary by Dr. Prowse.)

28. A. C., 5 years, female, Oldland Common, was taken ill about September 3rd, and was *paralysed in the left shoulder*, for which she was admitted to the Children's Hospital on October 10th. The paralysis passed away more or less completely. The patient has moved away, and her present condition cannot be discovered. (Attended at Royal Children's Hospital.)

29. M. F., 6 months, female, Compton Martin, in September had a feverish attack for one week, then *paralysis of all four limbs*. The left leg remains feeble, cold, and wasted. (Attended by Dr. Gough at Royal Children's Hospital.)

30. W. R., 1 year, male, Short Street, St. Philips, had a long attack of "bronchitis" in December, and in January the mother noticed that he was partially *paralysed in the left leg* and unable to "put his heels down to the ground." At the present time there is some wasting in the left leg, and the foot till lately turned out when walking and could not be dorsiflexed. (Attended at Bristol General Hospital.)

31. A. F., 3 years, male, Lincoln Street, Barton Hill, went to bed quite well on July 1st, but when the morning came *the left leg below the knee was completely paralysed*. There was no history of pain at any time. The leg below the knee is now wasted, cold, and blue. It is 2 in. less in circumference than the other and is 1 in. deficient in length. He can stand and walk a little, but the arch of the foot has given way and he cannot dorsiflex the foot. He lived a few doors from No. 1. (Attended at Bristol Royal Infirmary by Dr. Stack.)

32. J. K., 2 years and 8 months, male, Harford Street, St. James, had always been healthy till in October the mother noticed that *his left leg was partially paralysed*. It is now wasted and cold, and there is no knee-jerk on that side. The arches of both feet have given way, but the boy runs about merrily. (Attended at Bristol Royal Infirmary by Dr. Nixon.)

33. D., male, address unknown, while attending as an outpatient for an injury to the elbow in January, 1910, was attacked with *paralysis of the shoulder muscles*, for which he was treated in the massage department. Present condition cannot be ascertained. (Attended at Bristol Royal Infirmary by Dr. Stack.)

34. F. M., 5 months, male, Hill Street, St. Paul's, was attacked with convulsions, diarrhoea, and sickness in August, and some time after was found to be *paralysed in the left leg*. The limb is still cold and wasted. The patient cannot stand alone, and there is no knee-jerk on the left side, though it is active on the right. (Attended at Bristol Royal Infirmary by Dr. Walters.)

35. C. S., 1 year and 4 months, male, Thomas Street, Stokes Croft, was said to have had a fall on June 13th, which was followed by convulsions. The next day he was *paralysed in both legs and the back*, and was taken to the infirmary. The temperature was 102°. The fundi oculi were normal. The knee-jerks were absent. The paralysis of the left leg became more marked, but the right was only slightly affected. An examination of the spinal fluid showed polymorphonuclears, 26 per cent.; lymphocytes, 68 per cent.; and endothelial cells, 6 per cent. There was gradual improvement, but the left leg is still much wasted, and shows no knee-jerk. The patient walks fairly well in an iron support. (Attended at Bristol Royal Infirmary by Dr. Edgeworth.)

36. F. S., 5 years, female, Greenbank Road, St. Mark's, had always been healthy. She had a sore throat on October 17th, and after three days' illness was admitted to the Royal Infirmary on October 20th, found to be affected with *paralysis of all four limbs*. The legs were completely paralysed, and the knee-jerks absent. On November 5th tonsillitis occurred (no Loeffler bacilli), and on the 9th a rash like measles appeared with enlargement of the glands behind both ears and below the jaw. Bronchopneumonia followed, and the patient died on the 13th. The *post-mortem* examination showed typical lesions of acute anterior poliomyelitis. (Attended at Bristol Royal Infirmary by Dr. Edgeworth.)

37. R. S. F., 3 years and 5 months, male, Alexandra Park, Redland, was always well and active till on August 14th he became drowsy and feverish. About four days later the *right leg was paralysed*. Gradual improvement took place, and he can now walk fairly, but with a limp. The right leg is still cold and wasted, but the knee-jerk is active. At the beginning of his attack there was some throat trouble, but two examinations for diphtheria gave a negative result. (Attended by Dr. Atchley and at Bristol General Hospital.)

ETIOLOGY OF POLIOMYELITIS.

BY

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DURING the past seven years poliomyelitis has been met with as an epidemic in many parts of Europe, America (including Canada and the United States), Australasia, etc. I need not refer to Wickman's classical description of this disease. New York in 1907 had a total of over 2,400 cases, and about one-half of this number in 1908. In 1909, during the months of July, August, September, October, and the first part of November, an epidemic of this terrible disease occurred at Montreal. It was widespread, most of the cases being from the poorer districts. Some, however, were found in the suburbs of the city and a few in the country districts, within a radius of fifty miles. Several hundred cases were treated here, between 50 and 60 of which were under my personal care.

During the autumn of 1910, while we have had only a few cases in Montreal, probably six to eight altogether, the epidemic has been present in many districts of Quebec and Ontario. In the Province of Quebec many cases have occurred at Sherbrooke and North Hatley; while in Ontario the disease has been prevalent in both Toronto and Hamilton, some one hundred cases having occurred at Hamilton alone.

The epidemics have differed in severity in different places. In Montreal we have not had many fatal cases. Among the number treated by me personally, the results were fatal in only three instances, or, in other words, a fatality of a little under 6 per cent. In many places, however, they have had a fatality of 12 per cent., and even as high as 17 per cent. In this respect it resembles typhoid fever.

Although the number of fatalities has not been great, the disease has added a great number of crippled little ones to our homes. It is, indeed, a sad sight, after an epidemic of this type, to see the number of children crippled and maimed for life.

During the past five years great progress has been made in the pathology of this peculiar disease. We have had opportunities to study it in recent cases which have ended fatally, and much of interest has been written on the subject.

What about the etiology?

In all the great medical centres distinguished pathologists and bacteriologists have devoted a great deal of time, attention, and skill in an endeavour to ascertain the cause of poliomyelitis. Landsteiner and Popper have done the pioneer work. They inoculated two monkeys successfully with the spinal cord obtained from two fatal cases of poliomyelitis. The injections were made into the peritoneal cavity, and one of the monkeys died on the sixth day; it was paralysed in the lower extremities. The other was killed on the nineteenth day, and the pathological changes were the same as those found in fatal cases in the human beings.

It remained for Flexner and Paul A. Lewis, at the Rockefeller Institute, New York, to make another step in advance. They succeeded in producing the disease in six successive monkeys. They employed intracerebral and intraperitoneal injections, but at this time they failed to find or to cultivate any organism. They have pointed out that portions of a bacteria-free filtrate were inoculated into a bouillon, containing 10 per cent. of rabbit's serum, which had been rendered perfectly clear and sterile by being put through a Berkefeld filter. On the second day the fluid in the upper half of the tube was cloudy. On the fourth day the fluid was used for inoculation into a monkey, which developed paralysis on the thirteenth day. This is practically the same inoculation period for typhoid fever. Flexner has definitely established the infectious nature of the virus. However, they have made sections and film preparations without having found either bacterial or protozoal parasites that could account for the infection, so that they have concluded that the infecting agent of poliomyelitis belongs to the class of minute and filterable viruses which have not thus far been demonstrated with certainty under the microscope.

Landsteiner and Lavaditi showed that not only was the virus capable of being transmitted through a series of monkeys, but that it was so minute as to be able to pass through the finest filter.[1]

Dr. Holt cites instances where 7 cases occurred in one family, 5 where 3 were affected, 5 where 4 had it, and 40 in which 2 were attacked. In 37 of the cases the interval between the first and second cases was ten days or less.[2] This certainly points to its contagious nature.

Several of my little patients who developed it lived in the same yard; and in other cases several lived in the same street and on the same side of the street. I think that it can rank with typhoid fever as far as contagion is concerned.

During the past few months I have been much impressed with the similarity between typhoid fever and poliomyelitis.

1. In the first place, both diseases occur in the late summer or fall months.

Table showing the Results of Examination of the Blood of Thirteen Cases of Poliomyelitis, and for Comparison the Blood of Three Normal Cases of Members of Infected Families to prove that the Widal Reaction was not a Family Peculiarity.

Initials.	Age.	Parts Paralysed.	Date of Onset.	Date of Examination.	Widal Reaction.		
					Positive.	Highly Suggestive.	Negative.
1. U. C. ...	3 years	Left and right legs	Nov. 2	Nov. 23	—	Yes	—
2. J. M. ...	4½ years	Right and left legs, left arm, thoracic muscles	Oct. 18	Nov. 23	—	Yes	—
3. B. M. ...	—	Right and left legs	Oct. 30	Nov. 18	Yes	—	—
4. B. L. ...	—	Both legs	Oct. 10	Nov. 14	—	Yes	—
5. M. L. ...	—	*Normal case*	—	Nov. 14	—	—	Yes
6. B. W. ...	19 months	Left leg	Sept. 25	Nov. 17	Yes	—	—
7. B. M. ...	14 months	Both legs and upper arms	Sept. 4	Nov. 4	—	Yes	—
8. E. S. ...	28 years	Right arm and leg	Sept. 17	Nov. 20	Yes	—	—
9. S. W. ...	1½ years	Both legs	Oct. 18	Nov. 20	Yes	—	—
10. H. F. ...	14 months	Both legs	Sept. 15	Nov. 20	Yes	—	—
11. F. J.... ...	4 years	Both legs	Sept. 25	Nov. 20	Yes	—	—
12. J. K.... ...	3 years	Right leg slightly	Aug. 20	Nov. 20	—	—	Yes
13. Mr. W. ...	28 years	*Normal case*	—	Nov. 20	—	—	Yes
14. P.C.	1½ years	Left leg	Sept. 10	Nov. 20	—	—	Yes
15. F. J.... ...	2½ years	Left leg	Sept 25	Nov. 20	—	—	Yes
16. J. M.... ...	5 years	*Normal case*	—	Nov. 20	—	—	Yes

2. As soon as the cold weather commences both, to a great extent, become extinct. During the late summer and fall months of 1909, while we had a severe epidemic of typhoid fever in Montreal amongst the adults and young people, at the same time we had an epidemic of poliomyelitis amongst the young children and babies.

3. Diarrhoea is just as common a symptom in poliomyelitis as in typhoid fever.

4. The incubation period of one is practically the same as that of the other. This has been proved by Dr. Flexner to be thirteen days experimentally, and Dr. Holt found it to be ten days clinically.

5. Both diseases are prevalent in large cities and small towns at the same time where and when the cause of typhoid fever is traceable to the water and milk supply; whilst, on the other hand, where the supply of water and milk is pure, both of these diseases are less frequent. It is practically the same degree of contagion.

These observations led me to believe that the micro-organism of poliomyelitis might be of the same character as the bacillus of typhoid fever.

Upon examination of the blood in cases suffering from poliomyelitis, I have found the Widal reaction present as in typhoid fever, proving conclusively that the disease is from the same source and cause, and that the germ of the one is allied to that of the other; further, I do not hesitate to make the assertion that the precautions necessary to prevent typhoid fever will also have the same effect in arresting the spread of poliomyelitis.

It will be seen that I obtained the Widal reaction in 6 cases of the blood examination out of a total of 16 cases. In four instances the report is highly suggestive, while in 6 cases the result was negative. However, three of these were taken from individuals in good health to prove that the Widal reaction was not a family peculiarity. This only leaves 3 negative cases to deal with. Two of the negative results were obtained from cases of poliomyelitis about two and a half and three months from the time of onset of the disease, and both of the cases were mild in character, only one leg being partially paralysed.

It appears to me that these results correspond fairly well with the results which would be obtainable from the examination of a similar number of typhoid patients. I may add that the blood was examined in every case by physicians who make a speciality of this work.

As typhoid fever affects the most vulnerable part of the adult—the intestinal tract, so poliomyelitis attacks the weakest point of resistance in the child, which is the nervous system.

As to treatment, there is no doubt that within the near future a serum will be obtained; and, if so, in suspected cases, during an epidemic of poliomyelitis, it is well to look for the Widal reaction, and, if present, the serum should be injected, which should have the effect of either modifying or preventing the development of the disease. In cases in which the disease has already developed, to prevent further extension the serum might be injected into the spinal canal, and would be likely to have an effect similar to that obtained by the method of treatment in cerebro-spinal meningitis.

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[1] Editorial note, *Archives of Pediatrics*, February, 1910. [2] New York Academy of Medicine, Section on Poliomyelitis, January 20th, 1910.

THE late M. Auguste Loutreuil, a Frenchman who made a large fortune by industrial enterprise in Russia, has bequeathed £120,000 to the Académie des Sciences, £100,000 to the Sorbonne, £40,000 to the Fund for Scientific Research, and £4,000 to the Paris Pasteur Institute. The money is intended to be applied in furtherance of scientific research.

IT was recently decided to form a Plymouth, West Devon, and Cornwall branch of the Research Defence Society, a Devon branch already existing under the presidency of Mr. Eden Phillpotts. The following are officers of the branch: President, Mr. W. Paul Swain; vice-presidents, Admiral Marrack, Colonel Giles, and the Rev. Dr. Trelawney Ross; honorary secretary, Dr. R. Jaques; honorary treasurer, Mr. Cyril A. Pode; committee, the president, honorary secretary, honorary treasurer, Miss Kirk, Colonel Giles, with two others yet to be appointed. A ladies' committee is to be formed.

THE GASTRIC ORIGIN OF ANGINA PECTORIS.

BY

H. WALTER VERDON, F.R.C.S.ENG.

ON January 2nd, 1911, when I entered Dr. X.'s room he was suffering from an anginal seizure which had already lasted half an hour. He had been making ineffectual efforts to expel wind from his chest, and allowed me to introduce an oesophageal tube, a procedure which resulted in an exhaustive liberation of gastric flatus. The effects of the operation became instantly apparent in the altered aspect of the patient. His colour returned, and he seemed no longer in pain. The seizure was manifestly at an end. On the last day of January Dr. X. informed me that on two occasions he had again resorted to the operation of gastric deflation, and upon each he had brought the seizure to a sudden and abrupt close. Dr. X. is 63 years of age, and has suffered from anginal seizures from time to time for several years. His first severe attack occurred in 1908.

When a seizure has been brought to an abrupt and complete termination by the introduction of the oesophageal tube, as in the case of Dr. X., and when later seizures have shown themselves amenable to a similar operation, the fact that the seizures are the result of tension of the gastric atmosphere is demonstrated beyond question.

Admission of this fact involves the recognition of the theory of the gastric reflex in the case of Dr. X., and also having regard to all cases of the type to which Dr. X.'s seizures genetically belong.

This type appears to be a prevalent one, since in descriptions of anginal seizures gastric symptoms are often mentioned as holding a prominent place. Time after time in an account of this disease Dr. James Mackenzie refers to flatulent distension, and even propounds the theory of air-swallowing to account for it. Moreover, Heberden in his classic description states that the seizure comes on more particularly when the patient walks after eating.

Probably in the same category are to be classed cases dying in an anginal seizure when at the autopsy no traces of disease in the coronary arteries are found. These number nearly 50 per cent. in a long series of collected cases.

If this be so, the theory of the gastric reflex must be admitted to occupy at least an equal place in our regard with that of the cardiac reflex.

Recently a case came under my notice demonstrating the fact that under certain favouring circumstances tension of the gastric atmosphere is associated with painful attacks indistinguishable from those of angina pectoris.

Mr. M., aged 62, for many years a subject of flatulent dyspepsia, had lately lost flesh, and in the course of his wasting had developed seizures of a painful character. The pain affected him when he walked and on going upstairs. It was felt in the region of distribution of the upper intercostal nerves including the costo-humeral branch. The seizures came on earlier in the walk after he had taken food than when he fasted, they were associated with sensations of gastric distension and they subsided upon free eructation of flatus. Seizures of a similar character often awakened him from sleep, and alike were relieved by expulsion of gas from the stomach. Mr. M. had suffered for years from attacks of flatulence coming on when he walked and disturbing his rest at night, but never before had they been accompanied by pain. Since pain had grown severe morphine had been taken, but with no satisfactory result. In this case the exhibition of nitroglycerine* proved to be exceedingly effective in the relief of pain, seizures always subsiding immediately after its administration, and its efficiency remained unimpaired until the day of his death, which occurred about eight weeks afterwards. The *post-mortem* examination revealed the presence of carcinoma which had infiltrated the wall of the oesophagus in the lower third of its length. There were secondary growths in the coeliac glands and in the neighbourhood of the liver. The oesophagus was slightly dilated in the region corresponding with carcinomatous infiltration and the cardiac orifice was patent. The heart, coronary arteries, and systemic vessels were quite healthy.

The seizures of pain in this case might be explained as being the result of pressure from a tense gastro-oesophageal atmosphere transmitted through the oesophageal wall and impinging upon the fibres of the plexus gulae. The plexus gulae surrounds the oesophagus in the lower

* The action of the nitrites is upon every kind of plain muscle throughout the body (Dixon's *Pharmacology*, p. 194).

part of its course, and its deep border lies an inch or more above the fusion of this tube into the stomach. It is formed by the breaking up of the vagi trunks into their constituent fibres, which anastomose at points and build up a network or cage which envelops the gullet; at the lower margin of the plexus the fibres converge and are again formed into two separate bundles. This plexus is reinforced by filaments from the sympathetic chain, and some of these filaments are of peculiar interest.

Sympathetic filaments worthy of special note arise in the second, third, and fourth thoracic segments of the spinal cord. They leave the spinal cord in connexion with the intercostal roots derived respectively from these segments and pass into the sympathetic chain; thence they proceed to the posterior pulmonary plexuses,[1] and when in this situation join the diverging fibres of the vagi as they descend to form the plexus gulae.

The significance of this sympathetic connexion lies in the fact that incidence of pain in the seizures from which Mr. M. suffered occurred in the cutaneous distributing area of the second, third, and fourth intercostal nerves, whose roots are associated with these filaments having connexions with the plexus gulae.

The paroxysmal nature of the seizure is also explainable on this hypothesis. Stimulation of the vagi results in contraction of the oesophagus, contraction of the pylorus, opening of the cardiac orifice of the stomach, and contraction of gastro-mural muscle[2]—in other words, imprisonment of the gastro-oesophageal atmosphere under pressure. A sequence of gastro-circulatory symptoms is thus set up, which only ends upon the escape of flatus or relaxation of gastro-mural muscle.

The case of Mr. M. therefore demonstrates the manner in which painful seizures of an anginal character may occur as a result of gastric tension.

Arguments in favour of the theory of a cardiac reflex are chiefly based on the doctrine of intermittent claudication introduced into the literature of angina pectoris by Benjamin Brodie in the year 1846. It is asserted that functional or organic obstruction of the coronary arteries, incomplete or complete, by narrowing the blood stream flowing towards the myocardium, or by withholding it altogether, is the cause of the seizure. Upon first impressions the doctrine looks probable enough; moreover, it is persuasive, since it can be made to apply in all cases. When death occurs during a seizure impacted emboli may be found in the coronary arteries, or these vessels may be thrombosed by blood clot of old or recent formation. Then the cause of death is obvious, and the seizure is accounted for. If these morbid conditions be absent and a state of arterio-sclerosis alone exists, it is argued that the arterial supply is sufficient while the heart is acting under normal conditions, but, when its action is increased by walking exercise or mental excitement, the supply falls short of the augmented needs of the myocardium, and consequently a seizure occurs. Nor is there any difficulty in accounting by this hypothesis for the 49.9 per cent. of cases belonging to a series introduced below, in which the heart and coronary arteries are found at the autopsy in a healthy state without sign, either macroscopic or microscopic, of any trace of organic disease, for even in regard to these cases, which might be considered by some as constituting a weak point in the orthodox doctrine of cardiac reflex by claudication, the student is reminded that functional spasm may exist in the coronary vessels as in any other in the circulatory economy. Since the days of Sir Benjamin Brodie these arguments have approved themselves to writers of textbooks and teachers of schools, and I do not remember noticing anywhere that they have been under question. Yet I do not think they can survive even a superficial examination, since a result of recent investigations into the physiology of the coronary arteries published by Schäfer[3] shows that the coronary arteries are not endowed with any vasomotor mechanism, nor do they suffer vaso-constriction in the presence of any known stimulus. It is idle, therefore, to continue to speak of functional spasm of these vessels as a cause of the seizure. Thus, by a stroke of the pen, 49.9 per cent. of anginal cases on the list of autopsies introduced below have already ceased to repose under the sanction of the doctrine of claudication. What of the 50.1 per cent. of anginal cases in which coronary disease is found at the autopsy? Do statistics warrant the assertion that coronary disease is a predisposing cause of angina pectoris? This question can be answered by a consideration of two further questions—namely, Is coronary disease more frequently found in autopsies made on anginal subjects than in autopsies made on other classes of circulatory disorder? And another, Is the age-period of life in which coronary disease is most frequently found also the age-period at which angina pectoris claims the greatest number of victims?

Taking under consideration a long series of autopsies in angina pectoris, numbering 283 cases collected by Tacchi, Sir John Forbes, Lusani, Potain, Gothair, Huchard, and Osler, I find a percentage of 50.1 in which coronary disease was present, and a percentage of 49.9 in which coronary disease was absent.

Compare this series with a list of 398 cases of arterial disease affecting indifferent visceral arteries, collected by Dr. Harlow Brooks, assistant professor of pathology, Bellevue Hospital and University, New York. These cases are described as coming under his notice consecutively in the ordinary course of his necropsial duties, the average age-period being 45 years. Brooks observed in this list 270 instances of coronary disease. This number represents a ratio equal to 73.3 per cent. of coronary disease.[4] It is thus evident that the prevalence of coronary disease in angina pectoris does not exceed that found in another class of circulatory disease. Brooks also states that of all visceral arteries the coronaries are far more frequently affected than any other, and that in aged persons coronary disease is almost universal.

Moreover, if coronary disease be a predisposing or exciting cause of angina pectoris, the death incidence of angina pectoris might be expected to increase annually after 60 years of age, when year by year the incidence of coronary disease is bounding upwards. But, just when the incidence of angina pectoris ought to be rising, in accordance with the accepted hypothesis, it is falling.

Osler gives the age-periods of mortality from angina pectoris. I quote from his Lumleian Lectures on the subject:

> There were under 30 years of age, 9 cases; between 30 and 40, 41 cases; between 40 and 50, 59 cases; between 50 and 60, 81 cases; between 60 and 70, 62 cases; between 70 and 80, 13 cases; above 80, 3 cases.[5]

According to Osler's figures, which correspond fairly accurately with those of the Registrar-General; the incidence of death from angina pectoris after 60 years of age declines year by year, until at 80 it approaches nullity, whereas during the same age-periods the incidence of coronary disease is increasing year by year until it reaches universality.

It is thus gathered from statistical evidence that the effect of the incidence of coronary disease on the causation of true angina pectoris of Heberden is nil. Nevertheless, its influence in the determination of a fatal issue is enormous; a myocardium impoverished through the attenuation of its nutrient supply soon falls victim to the exigencies of an anginal seizure. Nor is it to be wondered at if during this period of cardiac disturbance diseased coronary vessels become obstructed with thrombus or embolus.

In accordance with this argument, thrombus and embolus of the coronary arteries, and even rupture of the ventricle, are the result and not the cause of the anginal seizure.

Moreover, when these accidental or cataclysmal phenomena spontaneously occur, the seizure resulting therefrom, although painful and fatal, does not belong to the anginal category; and finally, all cases presenting the true paroxysmal characteristics as described by Heberden are probably the result of a gastric reflex, and perchance may be made amenable to gastric treatment by surgical methods, palliative or radical.

References.

[1] Cunningham's *Anatomy*, p. 710. [2] Starling's *Physiology*, pp. 358, 361, and 362. [3] Schäfer, Oliver Sharpey Lectures, April, 1908. [4] *Amer. Journ. Med. Sci.*, May, 1906, p. 781. [5] *Lancet*, March 12th, 1910, p. 698.

Under the will of the late Mr. Henry Veasey of Aspley Guise, Bedfordshire, the Royal Medical Benevolent Fund and the Hunstanton Convalescent Home receive £300 and £200 respectively. The testator, who died in January at the age of 92, was a medical man formerly in practice in the village in which he died. He received his medical education at Guy's Hospital, becoming L.S.A., and M.R.C.S. in the year 1840 and F.R.C.S. in the year 1862. His estate was valued at £36,479.

A NOTE ON THE BENEFICIAL EFFECT OF THE INGESTION OF CANE SUGAR IN CERTAIN FORMS OF HEART DISEASE.

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THE idea of using sugar for this purpose is somewhat startling, until one has thought over the physiology of sugar for a moment; I shall therefore briefly run through the changes undergone by cane sugar from its ingestion to its storage and use in heart muscle.

That glycogen is essential to healthy, well-nourished muscle is shown by the fact that it furnishes a source of energy for the needs of the tissue cells, and particularly for muscular work. The glycogen of a muscle disappears in proportion to the work done by the muscle, and, indeed, prolonged muscular work, especially in starvation, may wipe out quickly the entire store of glycogen in the body—in the liver as well as in the muscles.

All modern physiologists agree that the glycogen stored up in a muscle is converted into dextrose by an amylolytic ferment before being actually used for producing muscular energy. Such a ferment has been discovered by Nasse. In cane sugar, therefore, we have a simple means for supplying the muscles with dextrose for the purposes of their activity.

All the foregoing is, of course, well-known straightforward physiology, but what is not so generally known, apparently, is that dextrose is capable of nourishing the heart muscle in a most wonderful and peculiar manner. F. S. Locke (King's College, London) has kept the excised mammalian heart beating for ninety-one hours after the death of the animal from which the heart was taken. Perfusion with solution of dextrose was carried out daily for five days, and at the end of that time the heart was beating so regularly that it was used by Professor Halliburton to demonstrate to a class of students. Again F. S. Locke says: "Experiments have been made with galactose, rhamnose, l-arabinose, and glucoheptose. No action at all comparable to that of dextrose could be found."

I have said enough to show the beneficial effect of dextrose on mammalian heart muscle, and in my hands the good effect of taking cane sugar to improve the nutrition of the musculature of the heart has been quite in accordance with what was to be expected from what is known of the physiology of the subject.

I will now very briefly give a few cases illustrating the clinical value of this mode of treatment of certain forms of heart trouble. I should mention that I have always used Glebe granulated cane sugar, which is, I am told, one of the purest cane sugars on the market.

Definition.—I take the physical signs of dilatation given by Broadbent in his work on the heart. The pulse is irregular in rhythm and unequal in force of beat; usually easily compressed. On deep percussion the heart is more rounded in the apex region than normal, and the area of dullness is greatly extended to the left. The first sound is short and sharp, and it is almost always audible in the aortic area.

Dilated Heart of Advanced Age.

Lady, 74 years of age. Dilated heart, with systolic murmur. Treated with drugs with little benefit. She was so ill that she had to be kept in bed in the recumbent position. She was put on cane sugar, and in the course of three months was able to go out walking. She has been quite well ever since, but she takes the sugar from time to time when she feels she requires it. This lady could not stand without feeling faint, but for the last four or five years she has been able to travel alone visiting her friends. She is now in her 81st year, and is quite well and walks out alone daily.

Gentleman, 77 years of age. In the habit of taking alcohol freely. His heart dilated and he was losing flesh. All alcohol was stopped and he was put on the sugar. In three months he was much improved. For the last two years he has enjoyed wonderfully good health. He is rather proud of his achievements in the walking way. Since beginning the sugar treatment he has had an attack of acute bronchitis and one of severe diarrhœa, but he got over both attacks in a wonderful way, and he is now at 80 years of age in excellent health, both mentally and physically.

Valvular Heart Disease.

Woman, 34 years of age. Admitted to hospital August 18th, 1910. August 27th, 1910, the note is: "There are very audible systolic and diastolic murmurs at the aortic base." She was treated for three months without benefit, and on December 1st, 1910, she was put on the sugar. She has now (January 20th, 1911) complete compensation, and her pulse is quite regular and of good tension, and she is assisting in the ward work.

Woman, 27 years of age. Admitted to hospital October 27th, 1910. On November 4th, 1910, "the apex beat is 1 inch outside the nipple line. Systolic murmur heard all over the chest, and a pre-systolic murmur at apex." The pulse is hardly perceptible, and her feet, legs, arms, and cheeks are blue (livid). Heart acting extremely feebly. On December 1st she was put on the sugar. On January 5th, 1911, she was up and helping in the ward work. She left the hospital January 20th, 1911.

For the two previous hospital cases I am indebted to the kindness of Dr. H. Davy, who, on December 1st, 1910, allowed me to select these cases as suitable for the treatment.

Post-influenzal Dilatation of Heart.

Gentleman, 60 years of age. In September, 1913, he had a sharp attack of influenza, after which his heart dilated with the usual symptoms. He was put on the sugar and improved rapidly, and has been well ever since.

Heart Strain.

Young man, 21 years of age. For some months has been riding all over Devonshire and Cornwall on a bicycle, carrying a heavy load of books on his back. He now complained of feeling weak, and unable to do his work. His heart was dilated. I ordered rest, and put him on the sugar. This was two years ago. He is now quite well, and there are no signs of his former trouble. I should mention that he suffered from pyorrhœa alveolaris, and it is possible this had something to do with the dilatation as a contributory cause.

Heart Failure in Tuberculous Phthisis.

Woman, 35 years of age. Strong family history of tubercle, from which her father, mother, and brother had died. Eighteen months ago she was extremely thin, and had decided symptoms of tuberculous phthisis. The right apex was consolidated, and there was slight expectoration, and she was losing flesh rapidly, and was confined to her bed. I put her on the sugar and Easton's syrup. In the course of six months she improved sufficiently for her to go out of doors for a short walk. Now (January 25th, 1911), she can run and do anything in the way of exercise as other people, and she is getting rid of the slatey appearance of her skin, and has a healthy colour. She has put on flesh and retains it. She still takes the sugar, but not in so large quantities. Her heart symptoms have almost disappeared—that is to say, the dull area is only slightly increased to the left, and the apex beat is nearly in the normal position.

I have had good results also in anæmic cases with dilated hearts and also in a case of chloroform heart.

In all these cases I have rarely found any sugar in the urine although so much sugar was taken; but occasionally there was a trace.

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MECHANO-THERAPEUTICS IN THE TREATMENT OF CHRONIC CONSTIPATION.

BY
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I HAVE followed with great interest the recent discussion on chronic constipation and its treatment, opened by Dr. J. F. Goodhart at the last meeting of the British Medical Association, which was reported in the BRITISH MEDICAL JOURNAL for October 8th, 1910. I could not but be struck by the scanty references which the various speakers at the meeting made to the value of mechano-therapy in alleviating the condition referred to.

The movement cure in its modern phase dates back to the commencement of the last century, when it was invented by the Swede, P. H. Ling (1776–1839.) After his death his pupils developed the work which he had begun, the chief ones being L. G. Branting, Hj. Ling, and H. Kellgren. Ling's Swedish treatment, at first entirely empirical, has in the course of a century undergone a development which grounds it firmly on a rational basis of physiology, anatomy, and pathology.

On considering the pathology of constipation from the mechano-therapeutic point of view, the following three features are apparent:

1. *Diminution in the Expulsive Power of the Intestine.*

This is generally a secondary state due to the second feature.

2. *Diminution in the Function of the Abdominal Sympathetic.*

The integrity of the sympathetic mechanism is dependent upon a normal amount of sensory conductivity in the sympathetic and a normal amount of discharge of motor impulse to the viscera. Diminution if sufficient in amount in either of these will, in the course of time, lead to defective innervation.

To test the functionability of the abdominal sympathetic, ordinary deep palpation is useful, noting the amount of tenderness. Instead of this, however, a friction with the finger tips across the portion of the abdominal sympathetic that is being palpated is an equally good if not a better guide. Frictions across the ganglion impar—that is, across the anterior surface of the coccyx—can also be used to test its condition. The friction will normally call forth certain definite sensations which may be rather acute. In abnormal cases, however, these may vary in amount from great hyperaesthesia to practially complete anaesthesia. With chronic constipation the tendency is nearly always towards diminished sensation, though this is more marked in the lower part of the abdominal sympathetic, and not so much in the case of the solar plexus and semilunar ganglion; in cases of rectal atony the ganglion impar is commonly found to have very little sensation, sometimes, indeed, none. The amount of sensation elicited by the above method is an excellent index to the state of functionability of the abdominal sympathetic.

3. *Diminution in the Power and Tone of the Muscles of the Abdominal Wall.*

(*a*) *The Muscles of the Anterior Abdominal Wall.*—It is extremely common to find these weakened in chronic constipation; the result is that there is a tendency to negative pressure in the abdomen and the intestinal contents suffer. Peristalsis is reduced, the intestine can more easily overdilate and less readily contract, enteroptosis will ensue with greater facility, the abdominal circulation will not be so good, stasis and varicosity will ensue. The act of defaecation will be rendered more difficult.

(*b*) *The Diaphragm.*—There is frequently coincident weakness in the diaphragm. Downward displacement of the diaphragm is a frequent if not invariable accompaniment of enteroptosis (Keith).[1] Furthermore, diminished action of the diaphragm will not bring about the continual changes in the shape of the liver, stomach, etc., which are so necessary to the fulfilment of their functions, and to the maintenance of the circulation within them (Hasse,[2] Walz,[3] Moebius[4]).

As regards the Swedish manual treatment referred to earlier in this article, the following exercises and manipulations are those best adapted to combat the foregoing pathological conditions.

1. *Active Movements (Purely Active or Resisted) bringing into Play the Muscles of the Abdominal Wall.*

A great number of these exist, but I shall content myself by merely referring the reader to the numerous articles and books that deal with the subject, only remarking that a suitable selection of movements must be made for each individual case.

2. *Respiratory Exercises.*

During Swedish manual treatment all active exercises should be executed (as already mentioned) with full regard to deep and free respiration on the patient's part, so that all such exercises are also respiratory exercises. There are, however, many exercises, both active and passive, which are solely used for the purpose of improving the respiratory mechanism. Again I would refer the reader to the extensive literature that deals with this particular class of movement.

3. *Passive Manipulations of the Abdominal Viscera.*

I shall confine myself to describing those most commonly employed.

(*a*) *Deep pétrissage of the abdomen* is given so that the abdominal contents receive a thorough kneading, the direction of the manipulation being, generally speaking, in the line of the large intestine, commencing at the ascending colon and ending at the sigmoid flexure.

(*b*) *Special Manipulations for the Liver.*—The lower border of the liver may be submitted to *pétrissage* or strong vibrations, either stationary or running along the costal margin. Frictions in a zigzag direction can also be applied here, and even tapoteruent of the liver. The amount of sensation induced is a good guide to the duration and intensity of the manipulation.

The effect on the abdominal contents of the above manipulations on the intestine is due to two main factors: (*a*) Alternate compression and relaxation, and (*b*) mechanical stimulation, chiefly direct, but partly reflex. The individual phenomena are as follows:

(*a*) Promotion of the venous flow in the portal system and the inferior vena cava (that is, unloading of the abdominal veins) and vaso-dilatation of the splanchnic area (that is, improved arterial supply).

(*b*) Stimulation of the intestinal peristalsis. In cases of largely dilated colon this is often quite visible to the naked eye; and quite recently it has been studied by some observers by means of the administration of bismuth and then the use of the *x* rays.

(*c*) Onward progression of scybalous masses—that is, unloading of the contents of the atonic intestine. This is frequently apparent during the actual application of the abdominal *pétrissage*.

(*d*) Improvement in the secretion of the pancreas, intestine, and liver.

(*e*) Increased absorption by the lacteals.

(*f*) Stimulation of the stomach proper, which tends to react favourably on the intestinal peristalsis.

(*g*) Stimulation to a certain extent of the abdominal sympathetic (see under next section).

(*h*) Stimulation of the abdominal parietes (see under active exercises).

(*i*) Various reflex effects on the heart, cerebro-spinal system, etc., which it is unnecessary to consider here.

4. *Passive Stimulation of the Abdominal Sympathetic.*

There are three ways of effecting this by means of "nerve frictions":

Reflexly. (*a*) Through the external branches of the posterior divisions of the spinal nerves.
(*b*) Through the anterior divisions of these nerves.
Directly. (*c*) Through the abdominal wall, as already stated.

A friction on a cerebro-spinal nerve is administered by drawing the fingers across it as nearly as possible at right angles to its long axis. Frictions on the external branches of the posterior divisions of the spinal nerves, or along the course or across the anterior cutaneous branches of the lower six intercostal nerves, can be employed in order to stimulate the muscle of the abdominal wall directly and the abdominal viscera reflexly. Friction on the abdominal sympathetic direct can be applied in the manner described on any portion of the sympathetic that may be needed; with topographical anatomy as a guide, it is possible to reach the solar plexus, semilunar ganglia, and inferior hypogastric plexus.*

References.

[1] *Lancet*, 1903, p. 631. [2] *Arch. f. Anat. (u. Phys.)*, 1886, 185-210; and ibidem, 1903, pt. 1, 23-26. [3] *Muench. méd. Woch*, 1902, xlix, 785-787. [4] *Muench. med. Woch.*, 1899, xlvi, 313-315.

* Further details on the manual treatment of the abdominal sympathetic can be found in the *New York Medical Journal*, 1910, pp. 171-175, and in the *Arch. gén. de thér. phys.* for November, 1910.

The twenty-first Congress of French-speaking Psychiatrists and Neurologists will be held this year at Amiens (August 1st to 6th) under the presidency of Dr. Deny, physician to the Saltpêtrière. The following are the questions proposed for discussion: *Psychiatry:* Different kinds of psychopathic pains; their significance and the part played by them. *Neurology:* Tumours of the pituitary body. *Legal Medicine:* The value of the testimony given by lunatics in courts of law. A number of original communications on subjects connected with psychiatry, neurology, medical jurisprudence, and the care of lunatics, will be made.

THE TREATMENT OF SYPHILIS BY SALVARSAN (DIOXY-DIAMIDO-ARSENO-BENZOL).

OBSERVATIONS UPON FORTY-FOUR CASES.

BY ARTHUR EVANS, F.R.C.S.EDIN.,

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SINCE November 28th, 1910, I have treated 44 selected cases of syphilis with the Ehrlich-Hata preparation. These include, for the most part, cases of chancre alone, cases of chancre *plus* early secondary manifestations, secondary lesions, and 11 tertiary lesions. Thirty-four cases were treated by the intramuscular injection of a neutral suspension of the drug, 10 cases by the intravenous method.

CASE I.—A male, aged 40, with a primary chancre of penis, "bullet" buboes in groin, a papular rash over the trunk and limbs, and a number of mucous patches in the mouth. Spirochaetes were present. This, the first case treated, was given a small dose, 0.4 gram, injected into the buttocks, half into each side. The chancre showed signs of softening within twenty-four hours; in forty-eight it was markedly diminished in size. The rash began to fade on the fourth day, and by the twentieth day had completely disappeared; the chancre had gone by the seventh day.

CASE II.—This patient was injected with the remainder of the capsule, amounting to 0.2 gram. A male, aged 28, with large ulcerating chancre, shotty glands in groins (spirochaetes had been previously demonstrated). Within a week the chancre and glands had entirely disappeared. The patient was discharged on the fourteenth day.

Following these, a number of other primary cases were treated with full doses of salvarsan (0.6 gram). The result was consistently the same as regards the gross primary and early secondary symptoms, as instanced by the rapid disappearance of the chancre, and of the adenitis, and the healing of the mouth and throat lesions.

A number of secondary cases were now treated, with similar success—condylomata, mucous patches, ulcers of the fauces, venereal warts on the vulvae, etc., disappearing with wonderful rapidity.

The effect on the rash on all our cases injected intramuscularly has not been so striking as on the more localized lesions; it tends to fade slowly, there being no appreciable diminution until the fourth or fifth day, or later. In two cases in which a full dose was given, an increase in the intensity of the rash was observed some twelve hours after the injection. Herxheimer has noted this in some cases, and attributes it to too small dosage.

The tertiary lesions treated included many gummatous ulcerations of the skin, a syphilitic infiltration of the lips, producing great thickening and induration, with stenosis of mouth, and a perforating ulcer of the hard palate.

It would be wearisome and unnecessary repetition to fully detail each case, but notes on a few of the more striking ones may be interesting.

CASE VII.—Male, aged 37, was admitted to the Lock Ward at Brownlow Hill Infirmary on August 7th, 1910, with a primary chancre of penis, contracted in May, 1910. He had been continually on mercury and iodides up to the beginning of November, when mercurial treatment was stopped, owing to salivation and general debility. The chancre had then disappeared, but he was still covered with a deeply pigmented papular rash. There were several superficial ulcers on the soft palate and fauces. His voice was hoarse and rasping; he was unable to swallow solid food, owing to pain from involvement of the lower part of the pharynx in the ulcerative process. In addition he suffered from stomatitis and soreness of the gums, with marked emaciation.

On December 15th he was injected with 0.6 gram of salvarsan. In forty-eight hours there was a marked improvement in the voice. The patient volunteered that he could speak and swallow without pain or difficulty. The rash began to show signs of fading on the sixth day. He put on flesh rapidly, and the ulceration of the mouth and fauces disappeared. In three weeks the rash had entirely gone, except for some deep-seated pigmentation, and he was discharged on January 21st and resumed his work as a labourer.

CASE XXXI.—Male, aged 38, had a number of healed scars on the trunk and limbs, periosteal nodes on the tibiae, and a marked gummatous infiltration of the lips. The condition had been present for nineteen years, the patient undergoing nine operations at various hospitals in London and the provinces, in order to overcome the contracture produced by a general thickening around the mouth. He had been on mercury and iodides for months at a time, with no benefit. His speech was greatly interfered with, both lips being greatly thickened and uniformly indurated.

On December 29th, 1910, 0.6 gram of salvarsan was injected into the muscles of the buttock. In a few days a marked softening of the tissues was evident. The lips began to be more pliable and elastic, and to diminish in size. As this proceeded, various operation scars became evident, two of which formed tight bands at each angle of the mouth. The orifice of the latter became more patent, and the patient was able to show his teeth. These bands have now been divided by operation, and the patient can use his mouth for all normal purposes.

CASE XXXIII.—Male, aged 29, contracted venereal disease in the army, 1900; he had suffered from ulcers on the right leg since May, 1910. He had had no previous treatment. There were two extensive serpiginous, deeply excavated ulcers on the lower third of the leg, the floor showing the usual yellow slough. These ulcers were surrounded by four smaller ones of a similar nature.

Injected on February 3rd intramuscularly with 0.6 gram of salvarsan. Signs of healthy healing were evident in a few days, and on February 21st the crater-like cavities had entirely filled up, and the growing edges of the skin completely fused. The leg is now entirely healed over (February 23rd).

CASE XXXVIII.—Female, single, aged 46, had had ulcerated legs for the past two and a half years. She gave no history of syphilis, but examination shows a very extensive irregular ulcer on the outer side of the right leg, surrounded by eight smaller ones in shape and appearance typical of a syphilitic lesion. There were no other evidences of syphilis.

Injected intramuscularly on January 21st, 1911, with 0.6 gram of salvarsan. Complete healing resulted in four weeks' time. This patient was in hospital for twelve weeks eighteen months ago for the same complaint, but left before healing took place.

It would perhaps be unwise to draw any definite conclusion at this early stage, but I can certainly, and without exaggeration, state that in all the cases treated by us with salvarsan it has been our experience, as regards the primary lesions treated, to see rapid improvement, with complete disappearance of the chancre in *all* cases before the fourteenth day, and in most cases earlier than this. Secondary manifestations have also disappeared very rapidly.

Nearly all the tertiary cases have shown marked improvement, gummatous ulceration of the skin, lesions of mucous membrane of the mouth, etc., healing in a most satisfactory manner. In only one case has the reaction been somewhat disappointing—a case of perforation of the hard palate, the necrosis extending to the septum nasi. This looks much healthier than before, but the necrosis of the septum still persists, and a further injection has recently been given.

Furthermore, in a number of the most chronic cases which had been under mercury and iodides for months with no perceptible improvement, the injection of salvarsan has been followed by rapid reaction. Almost immediately the chronic lesions seem to assume a healthier look; healthy granulations spring up; deep crater-like ulcers of the skin fill up from the bottom, with a rapid ingrowth from the margins, the patient puts on flesh rapidly, and the general metabolism improves. How much of this may be due to "suggestion" time alone can tell.

With regard to the choice of methods—intramuscular or intravenous injection—we have had as good results with the former as with the latter in the tertiary stages. In the primary and early secondary stages the intravenous method produces a more rapid disappearance of the lesions.

The intravenous injection has been performed in nine cases by exposing one of the veins near the elbow by dissection under cocaine, the cannula being introduced well into the lumen of the vessel. In the last case, as the veins were prominent and the skin thin, the needle was inserted directly into the vein.

The solution must be prepared with great care.

Fifty c.cm. of sterile normal saline solution, made from *distilled* water is put into a graduated sterile flask of 500 c.cm. capacity; to this the salvarsan is added, and a yellow solution results on shaking. A 15 per cent. sterile solution of sodium hydrate is now added, drop by drop, at first producing a precipitate, the flask being vigorously shaken from time to time. When from 25 to 30 drops have been added a golden yellow solution results. This is diluted up to 400 c.cm. by the addition of more saline and is ready for use. The solution is kept at a temperature of 104° to 105° F.

We have used, up to the present, the ordinary transfusion apparatus, but Messrs. Sumner and Co. are making for me a special vessel on the principle of the Dewar's flask, which will retain an even temperature for some considerable time.

A column of normal saline solution is first allowed to flow into the vein, followed by the solution of "606," which is strained through sterile gauze. Finally, saline is again allowed to flow.

By this method no portion of the solution can enter the tissues at the point of injection.

It is important that distilled water should be used for making the solution. Tap water produces a fine suspension. We have had no untoward occurrences. There is always a rise of temperature followed by headache and vomiting, and in some cases rigors and diarrhoea.

The condition of the patient is a cause for anxiety at first, but within twenty-four hours all symptoms clear up. In men 0.4 gram, and in women 0.3 gram doses diluted in saline solution have been given.

The intramuscular method has the disadvantage that great pain follows the injection, which may persist for several days, and in some cases weeks. In two cases sterile abscesses occurred at the site of the injection. No culture could be obtained from them, neither could any arsenic be demonstrated. The reaction as regards pain, temperature, headache, vomiting, etc., seems to be much less in women than in men.

In conclusion, I owe much to my house-surgeon, Dr. W. Messer, for his help in assisting me and making notes on the cases. I have also to thank Dr. Stopford Taylor and Dr. R. W. MacKenna for supplying me with some tubes of salvarsan before it was obtainable in this country; also Dr. Moore Alexander for isolating the spirochaete in doubtful cases.

THE CURATIVE EFFECT OF SALVARSAN IN FRAMBOESIA.

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I STATED in my first communication in the BRITISH MEDICAL JOURNAL of February 18th, 1911, page 360, that the injection of 18 cases of yaws with salvarsan at the St. Augustine Yaws Hospital, Trinidad, on January 4th and 11th, was followed by immediate and wonderful improvement. I subsequently injected 3 cases, and I am now (February 18th) able to give the results in these 21 cases. Each received only one injection.

Cured ...	...	... 13, or 61.9 per cent.
Nearly cured	...	... 3, or 14.3 per cent.
Stationary	...	... 5, or 23.8 per cent.

The shortest period taken to cure was thirteen days, and the longest twenty-eight days.

I find that salvarsan has no effect on yaws tubercles of the nostrils (tubercles situated at the junction of the mucous membrane of the nose and the skin). This failure was noticed in two cases treated by salvarsan and in one treated by serum.

The cases of yaws injected with serum taken from recovering salvarsan cases on the fourth or fifth day all improved for two or three weeks. Some remain stationary, and others have got worse. I believe that if yaws cases were injected with serum every seven or ten days they would be cured with three or four injections.

I injected a goat that had two kids a month old, with 0.3 gram (4½ grains) of salvarsan, and the milk was given to two children in the female ward. Improvement began in the children on the third day, and continued slowly and surely for fourteen days. The goat was borrowed for two weeks, and was sent back to the owner. I intend injecting a cow, and using the milk on a more extensive scale. If my experiment with a goat is verified by others (using more salvarsan than I did) it means a complete overthrow of the theory of Professor Ehrlich, for it must be the salvarsan itself which produces the antibody, and it is probably of the nature of a ferment.

My further experiments with serum are not connected with salvarsan. I put blisters on some yaws cases and used the serum—dose 16 c.cm. for adults—to inject, each case getting his own serum. The object of this experiment was to see if the blistered surface secreted a beneficial substance. I got no results.

I put blisters on some cases cured of yaws by ordinary means, and used the serum on four yaws cases. There was a slight improvement, which did not last for more than a week.

I tried cacodylate of soda, arsacetin, orsudan, atoxyl, and soamin. I find that only orsudan and soamin are of some benefit in yaws. A 9-grain injection (adult dose) was given once a week. The formula given for soamin is the same as for atoxyl, and I am at a loss to account for the failure of atoxyl, a failure previously recorded by Professor Castellani in Ceylon.

I had salolized capsules prepared by the dispenser and filled with 1 grain of methylene blue and an inert substance. The capsules were gummed and powdered with salol, and allowed to dry. This was done three times. When given to patients and healthy persons, four hours elapsed before the urine was discoloured, so I conclude that absorption takes place in the bowels. I am now trying soamin in these personally tested capsules, and so far as the experiment has gone, it acts well. I will try salvarsan in this way, when a supply comes from England. I suggest the use of tested salolized capsules made with a double end, the small compartment containing 1 grain of methylene blue. On filling such a capsule with a drug, the discoloration of the urine would exactly indicate when absorption began.

It is my intention to try 1 per cent. injections of the hydrochloride of quinine and urea before injecting with salvarsan intramuscularly so as to mitigate the pain by producing local anaesthesia.

SUMMARY.

Salvarsan is the best drug for use in yaws. I have no doubt that this fact has been discovered in every yaws hospital. The experiments in Trinidad have contributed to knowledge in four directions:

1. The serum of cases recovering under salvarsan has been shown to have a curative effect.
2. Nostril yaws tubercles are not affected by salvarsan nor by serum.
3. The milk of a goat injected with salvarsan has a curative effect.
4. Soamin and orsudan are the only organic compounds—excluding salvarsan, of course—that cause some benefit in yaws.

Full details of all my experiments are recorded and communicated to the Acting Surgeon-General of the Colony. My thanks are due to him and others for their appreciation and encouragement. Further experiments will be undertaken.

THE SCIENCE COMMITTEE OF THE British Medical Association.

OBSERVATIONS ON THE OCCURRENCE OF FLUID IN THE ABDOMINAL CAVITY IN PREGNANT RABBITS.

BY

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THE presence of free fluid in the abdominal cavity of the pregnant rabbit has been noticed in the course of research by several observers, but as far as we are aware no special observations have been made with regard to the nature of the fluid present nor to the possible cause of its occurrence. It has occurred to us that some such observations may be of value, especially in relation to the work done by one of us (C. B.) on the pathology of cardiac dropsy.

Relative Frequency.—The relative frequency of free fluid in the peritoneal cavity has been estimated in a series of pregnant and non-pregnant animals:

(*a*) Non-pregnant: Ten non-pregnant animals were examined, 4 males and 6 females, and although the intestines were moist in all cases, in only 2 was a measurable quantity of free fluid obtained, and in these 2 cases (1 male and 1 female) the quantity was very small, as indicated below.

(*b*) Pregnant: In 16 pregnant animals examined, we only failed in 2 cases to obtain a measurable quantity of fluid. This gives the following percentages of cases with free fluid:

(*a*) Non-pregnant, 20 per cent. (probably is much smaller).
(*b*) Pregnant, 87.5 per cent.

Distribution.—The presence of free fluid in the pleural cavity was noted in 3 cases in pregnant animals and in no case in a non-pregnant. In the pericardium a small quantity of fluid was generally found in all cases. In no case was subcutaneous oedema present.

Amount of Fluid Present in the Abdomen.—(*a*) Non-pregnant: In the 2 cases occurring in the series of 10 non-pregnant animals examined the quantity of fluid amounted to 2 c.cm. and 3 c.cm. respectively.

(*b*) Pregnant.—In the series of 16 animals, 14 had fluid in quantity varying from 1.15 c.cm. to 25 c.cm.

The series is as follows:

I. 1.15 c.cm.	VII. 3.50 c.cm.	XII. 2.50 c.cm.
II. 14.50 c.cm.	VIII. 2.50 c.cm.	XIII. 2.00 c.cm.
III. 9.00 c.cm.	IX. 3.50 c.cm.	XIV. 1.50 c.cm.
IV. *Nil.*	X. 8.00 c.cm.	XV. 25.00 c.cm.
V. 3.00 c.cm.	XI. 5.00 c.cm.	XVI. 15.00 c.cm.
VI. *Nil.*		

We feel justified from these figures in concluding that the presence of free fluid in the abdomen is a more or less general occurrence in pregnant rabbits and not merely a coincidence.

Blood Pressure.—We have examined a series of non-pregnant and pregnant animals with a view to ascertain whether any blood pressure changes were to be noted in animals with free abdominal fluid.

Technique: Anaesthesia.—Ether was used in all cases, anaesthesia being induced with a mask. Tracheotomy was then performed, and the administration of ether continued through an apparatus attached to the artificial respiration pump. Special care was taken to imitate the natural respirations of the animals by careful regulation of the pump, a free outlet of air being provided.

Position.—The animals were fixed to a board in the supine position, care being taken to tie them down loosely so as not to interfere with the venous flow. The head was slightly raised on a small board, the same board being used for all experiments.

Method of taking Blood Pressures.—The following routine was followed in all the cases after the first two or three. First the pressure was taken in the right carotid artery with an ordinary mercurial U tube manometer; then the blood pressure in the left external jugular was taken by passing a cannula down the large auricular vein until the mouth of the cannula came to lie flush with the wall of the jugular vein without obstructing the flow of blood in that vessel. The cannula was then connected with a manometer containing a solution of $MgSO_4$ (specific gravity 1046) and the pressure in millimetres recorded; the height of the vein above the table on which the manometer stood was then measured and deducted from the pressure recorded. The pressure in the common iliac vein was now recorded in a similar manner by passing a cannula up the femoral vein. At the end of each experiment the pressure in the left carotid artery was again taken.

In a few cases we attempted to take the pressure in the portal vein, but we found this rather difficult, and therefore decided to work it out in a separate series of animals.

The results obtained are indicated below:

(*a*) *Non-pregnant Animals.*

No. of Experiment.	Sex.	Carotid Artery B. pressure in mm. Hg.	Jugular Vein in mm. $MgSO_4$ Sol.	Iliac Vein in mm. $MgSO_4$ Sol.	Fluid in Abdomen in c.cm.
1	M.	90	55	83	—
2	M.	60	60	Not obtained	—
3	F.	110	50	85	—
4	F.	58	35	Not obtained	2.00
5	F.	70	37	85	—
6	F.	75	20	120	—
7	M.	65	50	89	—
8	M.	80	45	115	3.00
9	F.	80	39	Not obtained	—
10	F.	77	51	112	—

(*b*) *Pregnant Animals.*

No. of Experiment.	Carotid Artery in mm. Hg.	Jugular Vein in mm. $MgSO_4$ Sol.	Iliac Vein in mm. $MgSO_4$ Sol.	Fluid in Abdomen in c.cm.
I	70	42	125	1.15
II	90	50	75	14.50
III	50	56	88	9.00
IV	50	38	74	*Nil.*
V	90	54	Not obtained	3.00
VI	90	70	96	*Nil.*
VII	52	53	83	3.50
VIII	70	62	110	2.50

It will be seen from the foregoing that the difference in blood pressure in the two cases is not appreciable, and we feel justified in assuming that there are no pressure changes in the peripheral circulation in the animals with ascites. We believe the same to be true of the portal circulation, but our experiments have not so far enabled us to make a definite statement on this point.

Composition of Fluid in the Abdominal Cavity.—We have examined the blood, the fluid found in the abdominal cavity, and in some cases also the chyle, for total solids.

Technique.—The blood serum was obtained by bleeding the animals from the carotid artery into dried glass tubes, allowing the blood to clot, and centrifugalizing. A portion of the serum was weighed in a dry glass capsule, dried at 60° C., and finally heated to 108° C. and weighed again.

The fluid from the abdominal cavity, which was a practically colourless fluid, was collected into similar tubes with a pipette and allowed to coagulate spontaneously, which it did in all cases in about half an hour. It was then centrifugalized and treated in the same way as the blood serum.

In order to obtain the abdominal fluid for analysis we used only animals in which the blood pressure had not been taken, in order to avoid the possible error of producing ascites by introducing $MgSO_4$ solution into the circulation.

Considerable difficulty was experienced in obtaining chyle in sufficient quantity for estimating the total solids; we first attempted to obtain it from the subclavian vein after ligature of the surrounding blood vessels, but failed to obtain undiluted chyle. We also found isolation of the thoracic duct unsatisfactory, and finally obtained the chyle by opening the receptaculum chyli, after all the abdominal fluid had been removed and the animal bled to death.

The examination of the various fluids for their total solid contents gave the following results:

No. of Experiment.	Blood Serum. Total Solids per Cent.	Abdominal Fluid.		Chyle. Total Solids per Cent.
		Amt. c.cm.	Total Solids per Cent.	
IX	6.896	3.50	2.741	—
X	6.324	8.00	2.349	—
XI	7.352	5.00	3.978	—
XII	5.866	2.50	2.254	—
XIII	7.691	2.00	3.115	8.629
XIV	6.738	1.50	4.220	3.738
XV	7.509	25.00	3.226	6.122
XVI	7.433	15.00	4.567	3.550

These figures closely correspond with those obtained in the case of heart disease in the human subject.

We have not yet had the opportunity of comparing the results thus obtained with fluid obtained from non-pregnant animals, as we used the only two cases that have come under our notice for blood-pressure experiments.

The type of dropsy in these animals, therefore, corresponds more closely to that of heart disease than to that seen in disease of the kidney or in hepatic cirrhosis, in both of which conditions the oedema fluid contains much less solid matter.

This conclusion is not at variance with the pathology of cardiac ascites, because, as shown by one of us,[1] in that condition there may be no changes of pressure in the peripheral circulation.

REFERENCE.

[1] Bolton: (*a*) *Journal of Pathology and Bacteriology*, August, 1903; (*b*) *Proceedings of the Royal Society*, B., vol. lxxix, 1907; (*c*) *Journal of Pathology and Bacteriology*, vol. xiv, 1909.

THE HISTOLOGY OF RHEUMATIC CARDITIS AND OTHER RHEUMATIC PHENOMENA.

BY

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Heart.—In all three parts of the cardiac wall certain inflammatory lesions, which have been called "submiliary nodules," are found. These nodules consist of (*a*) a groundwork of homogeneous material which gives the staining reactions of fibrin; (*b*) a more or less defined zone of cellular proliferation, the characteristic cells being large and of a fibroblastic type, with a deeply staining cytoplasm, and from one to six nuclei in which a somewhat loose chromatin skein takes haematoxylin with avidity. They are therefore similar in structure to the larger subcutaneous node so characteristic of rheumatic infection. The shape of the nodule is dependent to some extent on its surroundings, being globular when lying in a loose bed of connective tissue, but fusiform where it is limited laterally, as it is when it develops in the interstitial tissues of the myocardium. In rheumatic lesions of the heart degenerative and necrotic changes are not intense in degree; exudation of leucocytes is moderate and diffuse, mononuclear types predominating.

Myocardium.—Recent work has confirmed the conclusions already stated.[1] The nodules are closely related to coronary arterioles; there are more in the wall of the left than in that of the right ventricle (though in one case the only nodule found was in the wall of the right ventricle) and only once has a nodule been found in the auricular walls apart from a few in contact with the mitral ring. In this case it lay near the base of the Eustachian valve in the interauricular septum. In two cases a nodule has been noted in the connective tissue limiting the *a–v* bundle, and in another case arterial changes in this region coincided with nodule formation at the point of junction between the *a–v* node and the bundle. In one case segmentation has been observed, and in another a close relation between nodule formation and the distribution of intracellular fatty change was seen. On the whole, the muscle cells appear less altered than might be expected, probably owing to the relative coarseness of the staining methods at our disposal.

Endocardium.—Here again recent investigation has merely confirmed observations already recorded.[2] The points of main interest are the almost constant occurrence of nodules in the deeper parts of the valves, the presence of a diffuse and mild mononuclear leucocytosis, and the ultimate vascularization of the inflamed valve. The endothelium proliferates; the surface cells float off owing to degenerative changes, and the fibrin deposited in this stripped surface—sometimes mingled with leucocytes from the intracardiac blood—becomes permeated with new connective tissue bearing young capillaries.

Pericardium.—The chief facts are that nodules have been found in all cases of active pericarditis, but not in quiescent cases. They have not so far been seen in the parietal but only in the visceral layer, where they are scattered over the cardiac surface. They lie at a varying distance beneath the endothelium, in which proliferation, superficial degeneration and stripping, fibrin deposit and capillary formation, are seen as in the endocardial endothelium. In the subendothelial tissue a moderate leucocytosis is seen.

The *aorta* has been examined several times but without the discovery of such lesions as have just been described. Mesaortitis and small patches of subendothelial inflammation have been seen, but there has been nothing in these to distinguish them from the similar lesions which occur in most infections.

Arteries, Arterioles, and Capillaries.—In one case the lumen of a coronary arteriole in the vicinity of the auriculo-ventricular bundle was almost closed by swelling of the arterial wall on one side, due apparently to the development of a nodule in its middle coat. Endothelial proliferation with thrombosis has been noted also in the arterioles and capillaries of a rheumatic joint. Coronary periarteritis was alluded to in the paper on myocarditis.

The central nervous system has been more or less fully examined in four cases of chorea.

Here it may be said that widespread chromatolysis is present throughout the cortex, and to a less degree in the optic thalamus and the pontine and medullary ganglia, while in the cord almost no changes were discovered. The pia mater, which has been fully examined both on the convexity and at the base, shows no change beyond intracapillary clotting and an occasional small extravasation of leucocytes. The one is probably due to *post-mortem* clotting and the other to passive hyperaemia.

Only two *joints* have been available. In one, a large and very definite nodule was found, with others less clearly defined, corresponding essentially with those seen in carditis. It lay just beneath the endothelium, which at other spots was proliferating. Throughout the synovial membrane and extending into the periarticular tissues was a mononuclear leucocytosis; there were further, the vascular changes already noted.

The other organs examined have been the lungs, in which an intense passive hyperaemia was seen, together with a mild bronchial catarrh; the lymphatic glands at the base of the heart, in which passive oedema and congestion were manifest; the spleen and liver; the kidney, in which spots of parenchymatous degeneration have several times been seen; the tonsils, thymus, and adrenals; and the thyroid gland from a case of Graves's disease with chorea, in which the changes peculiar to the former disorder were found. In none of these organs has any kind of interstitial inflammation been seen.

Other types of cardiac infection have been examined by way of comparison with rheumatic carditis. In practically all cases of destructive endocarditis and purulent pericarditis foci of inflammation are found in the myocardium; but in no such case has an inflammation of all three layers been seen. Further, the inflammatory reaction is chiefly characterized by an exudation of leucocytes, usually polymorphonuclear, not by a proliferation of the cells of the part invaded. In one case of protracted cardiac and articular rheumatism, terminated by a lobar pneumonia from which the pneumococcus was readily isolated, two sets of lesions were visible side by side in the heart, and even in the same section—the one characteristic of rheumatic infection, the other a polymorphonuclear focus. In one of these latter pneumococci were demonstrated.

Finally, it may be added that examination of lesions produced by inoculation of animals with micro-organisms said to be the cause or causes of rheumatism is proceeding. A good deal of material has been dealt with, but any statement as to the results would be premature at this stage.

It is my pleasant duty to thank my colleagues at the Bristol General Hospital: Dr. J. A. Nixon, Dr. G. A. Sutherland, Dr. Reginald Miller, Dr. E. H. Kettle, Professor J. M. Beattie, Dr. W. V. Shaw, Dr. W. T. Longcope, and Dr. James Fletcher, for allowing me to use material; and Professor Walker Hall for kind help and for laboratory accommodation.

REFERENCES.

[1] *Quarterly Journal of Medicine*, October, 1908. [2] *Lancet*, May 15th, 1909.

THE RAT FLEA AS THE INTERMEDIATE HOST OF A RAT TAPEWORM.

BY

WILLIAM NICOLL, M.A., D.Sc., M.B., CH.B.,

ERNEST HART MEMORIAL SCHOLAR.

A LARVAL tapeworm was brought to me by Professor Minchin for identification, and it was suggested that it bore a close resemblance to the scolex of *Hymenolepis diminuta*, one of the commonest tapeworms of the rat. The cysticercoid was found during the dissection of some rat fleas (*Ceratophyllus fasciatus*), and apparently occurred free in the body cavity. Further investigation showed that it was present in about 4 per cent. of the fleas, and usually only a single specimen in each, although three were found on one occasion.

The most characteristic feature of the cysticercoid is its small rostellum, devoid of hooks. This at once suggests *Hymenolepis diminuta*, but that is not the only unarmed tapeworm infecting rats. Several other less common species have been described—for example, *Hymenolepis relicta* (Zschokke), *H. horrida* (v. Linstow), and *Catenotaenia pusilla* (Goeze), along with a number of imperfectly described forms, such as *Taenia ratti* (Rud) and *Taenia umbonata* (Molin).

With the view of determining what tapeworms were present in the stock of rats from which the fleas were obtained an extensive examination of the faeces was made. The ova of *Hymenolepis diminuta* were found in great abundance, and the only other tapeworm eggs which were found were similar to those but considerably smaller. A number of rats were then dissected, and *Hymenolepis diminuta* was found in moderate numbers in several. Another smaller, undetermined, tapeworm was found on one occasion. It was also unarmed, and resembled *Hymenolepis diminuta* to some extent, but its eggs were considerably smaller.

The common occurrence of *Hymenolepis diminuta* amongst the rats rendered the identity of the cysticercoid in the flea almost certain, but in order to establish it a series of feeding experiments were undertaken. Five young rats, newly weaned, were isolated. Their cages were protected, as far as possible, from the entrance of insects, and they were fed on boiled bread and milk. Three of them received nothing else, but the other two were fed daily with 20 fleas. The faeces were examined daily, but no ova were observed until at the end of nineteen days one of the two rats died, and eight specimens of *Hymenolepis diminuta*, in various stages of development, were found in the intestine. On the twentieth day ova of the tapeworm were found in the faeces of the other rat. No other species was present. The faeces of the remaining three rats were examined daily for a fortnight further, but no ova were obtained from them, and at the end of two months the faeces were still free from ova. A similar experiment was conducted later with the same result. There can be, therefore, little doubt that the cysticercoid in *Ceratophyllus fasciatus* is the larva of *Hymenolepis diminuta*. That the rat kills and eats fleas is a matter of common observation.

The cysticercoid (*Cercocystis*) of *Hymenolepis diminuta* was first described by Grassi and Rovelli[1] in 1892 (under the name *Taenia leptocephala*). The cysticercoid which they describe corresponds precisely with that in the rat flea. It is a small ovoid body measuring, when fully grown, about 0.31 × 0.25 mm. The unsegmented tail on which the embryonic hooks remain visible is longer and narrower than the body, and may reach a length of 0.8 mm. In the invaginated state the body wall consists of four layers—an outer radially striated cuticular layer, a layer of columnar cells, a layer of connective tissue cells continuous with those in the tail, and a layer of cells forming an internal membrane. Within this is a small lacuna which separates the posterior part of the scolex from the cyst wall. The scolex itself measures about 0.075 mm. in length and 0.09 mm. in breadth. The suckers have a diameter of 0.055 mm. The rostellum is small but distinctly prominent. When the scolex becomes evaginated the wall of the cyst is rapidly replaced by parenchymatous cells like those in the tail, and the lacuna, which is at first rendered more obvious by the evagination, is also filled up by cells.

This is the first record of the occurrence of this cysticercoid in the rat flea. Grassi and Rovelli found it in four different insects, but do not appear to have examined the rat flea. They established the identity of the cysticercoid, which they found, by means of feeding experiments not only in rats but also in the case of man. The adult tapeworm is an occasional parasite of man, and has been recorded several times from America, and in a few instances from Denmark, France, and Italy.

Only two instances are yet known of fleas serving as the intermediate hosts of tapeworms. The first of these is the well-known *Dipylidium caninum*, the larval stage of which is passed in the dog flea and the human flea. The other has been described quite recently by Dampf from the flea *Mesopsylla eucta*, which is parasitic on the jerboa (*Alactaga* (*Dipus*) *jaculus*). No corresponding tapeworm is known from the jerboa, but the cysticercoid bears a certain resemblance to *Hymenolepis nana*. It is evident that fleas and lice form very convenient intermediate hosts, and it would not be surprising if a much larger number of instances were recorded in future, especially amongst the *Hymenolepididae*. Tapeworms of this family, however, usually pass their larval stage in small crustaceans.

REFERENCE.

[1] Ricerche embriologiche sui cestodi. *Atti Accad. di sci. nat. in Catania.*

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ARE POLIOMYELITIS AND HERPES ZOSTER THE SAME DISEASE?

DURING August and September, 1910, when acute anterior poliomyelitis was epidemic in Maryport, Cumberland, I noted that we were also having an unusual number of cases of herpes zoster. The appearance of these diseases simultaneously in epidemic form struck one at the time as being rather remarkable; I pointed it out to four colleagues here during the first week of September, and argued that there was possibly some etiological connexion between the two diseases on the following grounds:

1. The lesion in poliomyelitis is situated in the anterior cornual cells, and in herpes zoster in the posterior root ganglia—that is, in morphologically equivalent parts of the motor and sensory nerve paths.

2. The *nature of the lesion* is in both diseases essentially the same—it is variously described by different writers as "inflammation," "haemorrhage," "thrombosis"—it is not yet definitely settled what the exact nature of the pathological process is, but, at any rate, it is in both cases *a vascular lesion*.

3. The constitutional symptoms are in both diseases the same.

4. Both diseases were distinctly epidemic here at the same time.

The suggestion that there might be some connexion between the two found no favour, and the matter dropped from my mind. But recently, in reading Dr. Henry Head's article on Herpes Zoster in Allbutt and Rolleston's *System of Medicine*, vol. vii, p. 473, I came across the following passage:

> A typical attack of herpes zoster arises without any obvious peripheral or central cause, and must be considered as an acute specific disease of the nervous system analogous to acute poliomyelitis. For it starts with a prodromal period of varying length, during which, in the majority of cases, the temperature is raised. During this period the patient feels ill, and has more or less pain, but it is impossible then to make a diagnosis. If a child, he is supposed to be sickening for an acute febrile disease. Suddenly, after a variable period, the rash comes on, and the disease declares itself. Thus in their onset herpes zoster and acute poliomyelitis closely resemble one another. Moreover, the lesion is in the one case an acute inflammation in the region of the motor cells of the anterior horns, followed by more or less secondary degeneration in consequence of the destruction of these cells; in the other an inflammation or haemorrhage into the posterior root ganglia, also followed by secondary degeneration due to the destruction of the ganglion cells of the posterior root. Now the cells of the posterior root ganglion are the morphologica equivalents of the large cells of

the anterior horn, and thus the parallel between the two diseases is complete. The reason that zoster is commoner than poliomyelitis is probably that one who has suffered from zoster is not hampered in the struggle for existence, whilst anterior poliomyelitis materially diminishes the likelihood of the patient's survival in the struggle.

Since reading it, I have tried to collect the cases of herpes zoster that appeared during the summer and autumn, and have already been able to trace ten cases occurring during the period of the poliomyelitis epidemic. Infantile paralysis is a rare disease here, and therefore the occurrence of an epidemic was easily recognized. Shingles is, on the other hand, a fairly common disease, and we see, on an average, perhaps one case every other month; but there is no doubt that it was unduly prevalent during the summer months—that it was, in fact, *epidemic*.

The wonderful analogy that exists between these diseases, looked at from every point of view, and the fact that they were simultaneously epidemic here, raises the question, May they not be dependent on the same infective process, attacking the anterior horns of the spinal cord in the one case and the posterior root ganglia in the other? In other words, Are not infantile paralysis and shingles one and the same pathological entity?

Maryport. R. P. Garrow, M.B., Ch.B.Aberd.

GOAT'S MILK FOR INFANTS.

The circumstance that a mother is unable to nurse her child satisfactorily is unfortunately one of very common occurrence. In default of the natural supply, the physician has the choice of either a prepared food or of cow's milk modified in a more or less complicated manner. A third alternative, which, although of great antiquity, seems now to be almost entirely neglected, is goat's milk. The circumstance that I have alluded to has recently happened to an infant whom I have had the opportunity of observing, and the addition to the dietary of goat's milk has had such satisfactory results that I thought the information might be of interest to medical men similarly placed. The administration began when the baby was 7 weeks old with one feed of 3 oz. in the day. This amount was gradually increased as the natural supply fell off, and at 3 months the baby was fed entirely on goat's milk, taking six feeds in the day of 4 to 5 oz. each. The milk was given without any preparation, as it came straight from the goat. Digestion was practically perfect. The average gain in weight each week increased from 3 to 4 oz. to from 6 to 8 oz., and the infant retained the fine bloom of health so characteristic of a wholly nursed child.

The convenience of having a first-class food that requires no sterilization or elaborate preparation needs no emphasis.

As a physiologist has no private practice I am unable to give a series of cases from my own experience, but I have come across, in the course of a very brief inquiry, five infants with a similar history. The second of these cases was interesting. She throve extremely well on the goat's milk. When her sister arrived the goat had left, and the usual modified cow's milk was adopted, with markedly inferior results, giving therefore a rough control experiment.

Goat's milk appears to lie somewhere between human milk and cow's milk as regards its physical and physiological properties. I hope shortly to be in a position to communicate the result of some experiments on this subject.

N. H. Alcock.

Physiological Laboratory, St. Mary's Hospital.

CAESAREAN SECTION FOR DYSTOCIA DUE TO VENTRIFIXATION OF THE UTERUS.

The following case should make a useful addition to those already recently recorded by Drs. Masson Fergusson and Amand Routh:

On January 20th, 1910, Mrs. W., aged 32, 3-para, after being in labour for some hours, sent for Dr. Collington, who, immediately recognizing the condition, sent for me to assist him. The patient, who had now been twenty-four hours in labour, was restless and exhausted. Ventrifixation had been performed eighteen months previously. The uterus was contracting every three or four minutes, and the wall was very thin. The cervix was dragged up quite out of reach. I took the case into hospital and operated at once. The operation lasted about twenty-five minutes. Both tubes were ligatured in two places. The fundus was firmly adherent to the scar in the anterior abdominal wall. Both mother and child did well, and are to-day in perfect health.

F. L. Harman Brown, M.B., C.M.,
Honorary Surgeon, Coventry and Warwickshire Hospital.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. BARTHOLOMEW'S HOSPITAL.

ACUTE TORSION OF THE GREAT OMENTUM.

(Reported by R. M. Vick, M.A., B.C.Cantab., M.R.C.S. Eng., L.R.C.P.Lond., House-Surgeon.)

The patient in the following case, a wood-carver, aged 29, was admitted to hospital on November 9th, 1910, suffering from abdominal pain. He had suffered from pain described by him as "stomach-ache" at intervals for several years. The seat of the pain had usually been the right iliac fossa.

Recent History.

The present attack began with pain in the right iliac fossa on Friday, November 4th. He was ill and stayed at home all day on November 5th. On November 6th the pain became much more severe, and was of a shooting character. He attended at the hospital and was treated with medicine, and advised to take a

Acute torsion of omentum.
A. Point of ligature. *B*. Omentum twisted into a stalk.
C. Distal part of omentum matted and gangrenous.

light diet. He vomited on the evening of that day, and again on the 8th. He was admitted to this hospital on the evening of November 9th.

Condition on Admission.

Unhealthy man. Tongue covered with a thick brown fur. Breath very foul. Temperature 100.2°; pulse 96; respirations 24. The abdomen moved well. Some fullness, tenderness, and rigidity of the right iliac fossa. The swelling was very definitely limited, and had a well-marked edge. Its edge extended upwards from the pelvis on the right side about 1 in. from the midline to the level of the umbilicus. It was dull to percussion, and with a definite point of maximum tenderness at McBurney's point. *Per rectum*, nothing abnormal felt.

The case was diagnosed as one of localized appendix abscess, and operated upon on Thursday, November 10th.

Operation.

The abdominal cavity was opened by a longitudinal incision, 4½ in. in length, starting 1 in. below and 1 in. external to the umbilicus. On opening the peritoneal cavity several ounces of sero-sanguineous fluid escaped. The appendix was found to be adherent to the caecum and one light adhesion connected it to the great omentum. It was removed and the stump invaginated into the caecum. The great omentum was then examined, and it was found that all the large veins in it were thrombosed and that the omentum was twisted on itself seven times and resembled a rope. It was covered all over with nodular thickenings; these were examined microscopically later and found to be composed of inflamed fatty tissue with the blood vessels engorged and thrombosed. The whole omentum was then drawn from the wound and found to be twisted right up to its attachment, with all the veins thrombosed. It was ligatured with interlocking sutures at its base and removed. The wound was closed and a collodion dressing applied.

Result.

The patient made a rapid and uneventful recovery and was discharged on December 13th.

A pathological examination of the appendix showed both old and recent inflammation. The annexed engraving from a pen-and-ink sketch of the parts removed shows the general appearance of the condition.

The recent literature on this condition[1] has established in nearly all cases a more or less mechanical causation for the torsion. It seems clear that in the great majority the omentum is twisted between two fixed points—its colic attachment and some adhesion below, usually the sac of an old hernia. Dr. Siegmund Madda,[2] of Breslau, has collected 92 cases of torsion of the great omentum.

The present case is interesting in that there was no hernial sac and no history of rupture. The adhesion to the appendix was quite small, and it is hard to imagine that it could have acted as anything but a weak anchor to the lower end of the omentum. The patient did not at any time suffer from constipation, but the history of pain in the right iliac fossa for several years at intervals was very clear. The clinical history of the condition appears to be fairly definite, though its pronounced resemblance to a mild recurrent appendicitis with a severe exacerbation is likely to prevent a pre-operative diagnosis. A continuous dragging sensation in one or other iliac fossa with indifferent health and often constipation, followed by an acute attack of pain in one or other of these regions and the gradual formation of a fluid swelling, localized, and increasing daily in size, are amongst the most prominent signs. It is almost certain that the condition is not in the first instance an acute one, but that the omentum becomes attached below, and for, perhaps, years goes through a process of gradual torsion; then one day, as the result of some strain, for example, violent purging, or possibly a blow on the abdomen, an extra twist is given, the veins are obstructed and the whole condition becomes acute.

The patient in the present case never at any time appeared as ill as a patient with an appendix abscess of the size of his swelling would have done. The infectivity of the fluid could not have been great as there were never any signs of general peritonitis and the patient made a very rapid recovery.

I have to thank Mr. D'Arcy Power, under whose care this patient was, for his kind permission to publish these notes.

[1] Picquet, *Bull. et mém. de la Soc. Anat. de Paris*; Cernezzi, *Chirurgica Clinica*.
[2] Langenbeck's *Archiv f. klin. Chirurgie*, vol. xcii, 1910.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ULSTER BRANCH.

Belfast, Thursday, January 26th, 1911.

Dr. WILLIAM CALWELL in the Chair.

Intravenous Injection of Salvarsan.

DR. CALWELL showed Grünbaum's apparatus for the intravenous use of salvarsan, and explained its technique; he had at first employed it, but found it rather cumbersome, and it was difficult to keep the injection at blood heat; he had finally used the ordinary saline transfusion apparatus, keeping the 300 c.cm. measure with the contents standing in a jug of water at blood heat, and poured it in as required, using a little normal saline before and after, and it acted perfectly satisfactorily. It was difficult to put the sharp-pointed needle into the lumen of the vein through the skin, so he had under a little eucaine exposed the vein and introduced the blunt cannula. He had done three cases without any bad symptom, except one—a woman developed an urticarial erythematous rash with high temperature for a few days, eight days after the injection. A typical case of early secondaries had improved very rapidly, the rash fading, the throat improving, and the glands disappearing. A woman—a patient of Dr. Houston's—with lung trouble strongly suspected to be syphilitic, and a perforating palate, improved, but there was little change in the lung. The third patient—general pains and one eruption which was impetiginous in places—showed an improvement. In all three there was a well-marked Wassermann reaction.

Rapidly Intensive Treatment of Chorea by Arsenic.

Dr. CALWELL also read notes of a case of chorea in a little girl where he had tried mx of Fowler's solution thrice daily. Formerly he had begun with small doses, and increased, but had noticed that it was not uncommon for the patient to improve to a certain stage and then stop. This patient took only four of the larger doses, and began suddenly to vomit. This persisted for a few days, the eyes got sunken, the pulse rose to 160, and the respiration became sighing. The case did not resemble an ordinary gastritis from large doses of the drug. The parents, on interrogation, said she was liable to attacks of this nature, although not so severe; acetone was found in the urine. Under large draughts of soda, and soda by rectum, she improved, and in a week was perfectly well and completely freed from the chorea. The attack seemed to be one of acute acidosis, possibly induced by the Fowler's solution; the case bears some resemblance to one described by Dr. McCaw in the Children's Section of the Association in the London meeting. This child had also had attacks of bronchitis, although their nature was not clear.

The paper was discussed by Drs. MAGUIRE and BROWNRIGG.

Abdominal Surgery.

Mr. ROBERT CAMPBELL read notes of four cases of interest: (1) Acute haemorrhagic pancreatitis treated by incision of the pancreas and drainage; (2) acute intestinal obstruction due to impaction of a gall stone in the ileum; (3) perforation of a tuberculous ulcer of the ileum; (4) severe intraperitoneal haemorrhage from rupture of a small ovarian cyst. These were commented on by Drs. DARLING, JOHNSTONE, and FULLERTON.

Cardiac Dilatation after Obstructed Labour, with Unusual Precordial Murmur.

Dr. H. L. MCKISACK described the case of a young lady who had been delivered on June 6th, 1910, by Dr. Hicks after a tedious labour. When first seen by Dr. McKisack, on June 9th, 1910, her pulse was of low tension, regular, and 130 to 140 per minute; aspect pale, breathless on slight exertion, heart considerably enlarged, apical pulsation well marked and extensive; also pulsation in epigastrium and in neck. A systolic murmur was heard at the apex, growing fainter towards the sternum. In the fourth right intercostal space, close to the sternum, and restricted to that immediate region, a loud rough murmur, systolic in time, was heard. On listening at the corresponding spot on the left side, a similar but somewhat less noisy murmur was heard, while over the intervening surface of the sternum the bruit was almost lost. It was soon found that while very gentle pressure of the stethoscope made no change in the character of the murmur, moderate pressure increased its intensity, and firm pressure caused its disappearance, and one could easily determine the exact spot where the edge of the bell of the stethoscope could best abolish the murmur. After a week the murmurs became less distinct, and the pulse improved in rate and in quality. In the course of about two months the patient's recovery was complete; the heart had regained its normal dimensions, and all the murmurs had disappeared; the pallor and breathlessness had also gone. It was mentioned that about two years previously, after an attack of influenza, the lady had suffered severely from anaemia, with extreme dyspnoea and palpitation. The strain of a difficult labour had evidently been sufficient to cause acute dilatation of the heart muscle, which was doubtless in some degree degenerated, as during her pregnancy the patient had suffered a good deal from anaemia. The murmurs close to the sternum were evidently produced in the internal mammary artery at each side, which, owing to the hypertrophied condition of the breasts, was of large calibre. As the murmur could be heard when the pressure of the stethoscope was almost *nil*, doubtless the arteries were constricted at some portion of their passage through the intercostal chest wall tissues. Moderate pressure with the stethoscope intensified the murmur; still greater pressure caused its disappearance. The turgescence of the breasts rapidly disappeared, as the infant was weaned from the beginning, hence the arteries rapidly diminished in size and their murmur gradually disappeared.

The case was commented on by Drs. HICKS and CALWELL.

Open Ether Anaesthesia.

Dr. P. T. Crymble read a paper on this based on 140 cases. He divided them into three groups:

1. *Children under Three Years.*—The inhaler which he used was a small metal cylinder having sixteen layers of gauze on one end and a rubber facepiece on the other end. He said a hernia operation could be done with 2 oz. of ether. The method was very safe, efficacious, and easily mastered by the student.

2. *Three to Sixteen Years.*—The inhaler used was the Roth-Draeger with the addition of a rubber facepiece. The induction period was long (five to seven minutes), during which there was much struggling. There was excessive mucous secretion. His conclusion was that the narcotile, then closed ether, then open ether, sequence was better.

3. *Sixteen Years and Upwards.*—Many women, old persons, and those exhausted by illness could be anaesthetized by dropping ether on to a gauze mask (sixteen layers of gauze). In a large number of adults ether given in that way did not produce anaesthesia in a reasonable time—that is, ten minutes. The following procedures overcame this difficulty: (*a*) Thirty minutes before operation a hypodermic injection of atropine $\frac{1}{100}$ grain, morphine $\frac{1}{4}$–$\frac{1}{3}$ grain, was given. This reduced the struggling, rendered less anaesthetic necessary, and prevented excessive mucous secretion. (*b*) The use of the Roth-Draeger inhaler and a rubber facepiece. Its advantages were that the patient could only inspire air laden with ether; less ether was used (℥vi–℥viij per hour was sufficient); clicking of valves was a useful guide as to respiration and as to fitting of facepiece. (*c*) Anaesthesia induced by chloroform one part, ether two parts. This was continued until the skin incision was made, when pure ether was used.

Conclusions.

1. Induction of anaesthesia, four to eight minutes.
2. Six to eight ounces of ether per hour (℥vi per hour in closed method).
3. Sickness in open ether 32 per cent.; in closed ether 76 per cent. (Osgood).
4. Absence of vomiting and spasm during operation (frequent in narcotile followed by closed ether).
5. Breathing quiet.
6. Absence of cyanosis.
7. A constant depth of anaesthesia easily maintained.
8. The apparatus could easily be sterilized.

Collapse.

Three cases of collapse were related:

1. Woman, aged 60. Cancer of breast, heart sounds weak and flapping. No hypodermic. C_1E_2; corneal reflex absent in seven minutes; eight minutes incision, pure ether. Respirations somewhat rapid. Respirations ceased; colour good; facial pulse present; artificial respiration; pulse disappeared; face cyanosed; head lowered, spontaneous respiration.
2. Boy, aged 16. Naso-pharyngeal sarcoma. Hypodermic, then C_1E_2, then laryngotomy, then ether on gauze mask held over laryngotomy wound. The tumour was then removed. There was some haemorrhage. Corneal reflex absent. Ether withdrawn; one minute later respiration ceased; pulse good; artificial respirations; pulse and face colour disappeared; head lowered, and at once breathing restarted.
3. Man, aged 40. Large rodent ulcer on scalp. Hypodermic, then C_1E_2, then E. Free haemorrhage, then breathing and pulse disappeared. Artificial respiration was performed; the head was lowered, and the feet raised. One and half minute later breathing restarted.

These cases of collapse were evidently due to cerebral anaemia, probably in Cases 2 and 3 following severe haemorrhage.

The paper was commented on by Dr. Fielden.

Angeioma of the Foot.

Mr. Fullerton read notes of a case of this condition in an old lady treated successfully by ligature of the femoral artery in Hunter's canal.

Ballooning of the Vesical End of the Ureter into the Bladder.

Mr. Fullerton read notes of a case of this condition which he had observed, and which was due to stenosis of the vesical opening of the ureter dating back for seventeen years.

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, March 2nd, 1911.

Sir Archibald Geikie, K.C.B., President, in the Chair.

CO_2 Output in Decerebrate Rigidity.

Dr. H. E. Roaf made a preliminary communication on carbon dioxide output during decerebrate rigidity. The object of the research was to determine the amount of energy required to maintain muscular rigidity in decerebrate cats. As an indication of the energy production, the carbon dioxide output was measured. The animals were maintained under constant conditions. The experiments were divided into two periods of two hours each. During the first period the carbon dioxide production of the decerebrate cats was measured, and during the second the carbon dioxide production, after abolishing the rigidity, was estimated. The results show that abolishing the rigidity did not alter the carbon dioxide output, and hence there did not seem to be any more energy used to maintain the rigid condition than when the muscles were flaccid. Decapitation abolished the rigidity and at the same time lowered the carbon dioxide output. The cause of this lowering of the carbon dioxide output was being investigated.

Cattle Trypanosomiasis.

Colonel Sir David Bruce, C.B., F.R.S., A.M.S., and Captains A. E. Hamerton, D.S.O., and H. R. Bateman, R.A.M.C. (Sleeping Sickness Commission of the Royal Society, Uganda, 1908–10), reported experiments to ascertain if certain Tabanidae act as the carriers of *Trypanosoma pecorum*. In the latter part of 1909 the Commission noted that an outbreak of cattle trypanosomiasis due to *T. pecorum* at Mpumu, Uganda, coincided with the appearance of swarms of *Tabanus secedens* in certain places where the cattle went to graze. In 1910 the following researches were commenced to ascertain if *T. secedens* might be the carrier of this trypanosome. An investigation of the biting flies occurring where the cattle became naturally infected showed twelve species of *Tabanus*, five species of *Haematopota*, two species of *Chrysops*, *Glossina palpalis*, and a new species of *Rhinomyza*. Before this investigation it was thought that some five or six species comprised all biting flies inhabiting the locality. *Glossina palpalis* was found inhabiting an inland stream having no connexion with Victoria Nyanza, and situated six miles from the Lake shore. Tabanidae appear suddenly in great numbers in certain localities for a few months only, then as suddenly disappear. *Haematopota* was found in open swampy places and forests. *Chrysops* and *Rhinomyza* were comparatively scanty; found about fords of streams in the forests. The three species, *T. secedens*, *T. fuscomarginatus*, and *T. thoracinus*, were the most common of the Tabanidae. Their eggs or larvae were never found, and only wild flies were experimented with. The flies would not live in cages. Transmission experiments were carried out in a fly-proof kraal built amidst the natural surroundings. Sick and healthy calves were daily placed together in a compartment of the kraal in which the above-named species were set free, the experiments being performed with only one species of fly at a time. The flies only lived a few days, but were frequently observed to bite the cattle. A control calf was kept in a compartment of the kraal to which no flies had access. Large numbers of flies of the above-named species were used, but no normal calf contracted the disease. Two series of dissections were made—first, of the wild flies obtained near the laboratory the same day they were caught; secondly, of wild flies introduced into the fly compartment of the kraal, after they had had the opportunity of biting the infected calf therein. In the first series 138 *T. secedens* and 49 *T. thoracinus* were dissected. Of the former, 5 per cent. showed a heavy infection of flagellates in the hind-gut, rectum, and proctodaeum only; of the latter, flagellates were found in hind-gut, rectum, and proctodaeum of 25.5 per cent. Inoculation of these parasites into white rats failed to cause disease. In the second series, liberated in the fly compartment of the kraal, 50 *T. secedens*, 24 *T. thoracinus*, and 37 *T. fusco-*

marginatus were dissected; two *T. secedens* were infected with flagellates, and one *T. thoracinus*; none of the *T. fuscomarginatus* were infected. Inoculation of these parasites into white rats also failed to cause disease.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, March 1st, 1911.

Dr. BYROM BRAMWELL, President, in the Chair.

Duodenal Ulcer.

PROFESSOR CAIRD, opening a discussion on this subject, said that the profession was greatly indebted to the clear and dogmatic teaching of Mr. Moynihan respecting it. He had established a definite symptom-group for the condition. At the same time, cases were not infrequent in which the characteristic symptoms were absent; on the other hand, these symptoms might be present in other conditions—for instance, cases of cancer in the neighbourhood of the duodenum might closely simulate the characteristic symptoms. The local conditions at the ulcer fell into three groups: shallow erosion appearing as whitish patches, thickening and induration, and fibromatous tumour masses. Medical treatment was often successful in early cases. Where operation was indicated, that of posterior gastro-jejunostomy was brilliantly successful. The speaker, in his own series, had not had a single case in which there was recurrence of the symptoms of ulcer, though, in a few, functional disturbances of digestion had occasionally returned. Any local treatment of the ulcer by the various means commonly advocated was unnecessary. Dr. RUSSELL said that with regard to signs and symptoms there was a complete parallel between gastric and duodenal ulcer; the one condition could produce the same clinical picture as the other, while in both conditions hyperchlorhydria was present in the great majority of cases. He strongly repudiated the view of Moynihan, who seemed to identify hyperchlorhydria with duodenal ulcer; but the former certainly often existed without the presence of ulcer. The speaker would divide the cases into early ulceration where medical treatment was successful, chronic ulcer where medical measures were useless and surgical interference was needed, and perforating ulcers. Dr. GIBSON reviewed his hospital cases for several years back; in all the diagnosis of ulcer had been confirmed *intra vitam*; chemical examination of the gastric contents showed that hyperacidity was often absent, or only present in very slight degree. There was no danger in using the stomach-tube in these cases, if there had not been recent haemorrhage. He was a convinced advocate of the value of operation, and especially where closure of the pylorus was added; in these the results had been most brilliant. Dr. DEWAR (Dunblane) said that in his own case attacks of severe and acute dyspepsia had alternated with intervals of perfectly efficient digestion. The result of operation in his own case had not been so brilliant as Professor Caird described, for though there had been improvement, he had had two attacks of melaena in the two years since the operation. Professor ALEXIS THOMSON said sex incidence had been very marked in his cases; he had operated on fifty males and five females. It was peculiar that whereas cancer frequently attacked the site of a gastric ulcer, he had never known this complication in the duodenum. One practical point in perforating ulcer was to transport the patient to hospital in a sitting posture, so that the stomach contents might find their way to the more resistant peritoneum of of the pelvis. Dr. AFFLECK advocated a thorough trial of medical measures before operation, though admitting that his experience of the results of operation had been very satisfactory. He cited cases of very severe haematemesis in which there had been complete recovery and no recurrence after many years. Mr. STILES alluded to the difficulty of diagnosis in certain cases. Malignant tumour of the hepatic flexure of the colon, and chronic adhesive peritonitis round the gall bladder, might give symptoms indistinguishable from those of duodenal ulcer. He had practised closure of the pylorus in cases of ulcer complicated by dilatation of the stomach, and also in pure cases of atonic dilatation of the stomach, and with good results. Those cases were apt to give trouble with vomiting ("vicious circle") where only a gastro-enterostomy was performed. Dr. GULLAND believed that recurrence after operation was more frequent than was indicated by surgical statistics. Examination of the faeces by fine chemical tests not infrequently showed the presence of blood in small traces. But, on the whole, he agreed with the beneficial effects of operation. Mr. CATHCART said that in his own experience the mortality in perforated duodenal ulcer was much higher than in perforated gastric ulcer. Mr. DOWDEN said that in operating on two cases of hairball of the stomach he had been struck by the way in which the harder masses of the ball were held close against the lesser curvature and pylorus, and were connected by prolongations with similar hard masses in the duodenum. He suggested the possibility of gastric and duodenal ulcers being caused by the similar apposition of unmasticated lumps of food. Mr. MILES said that statistics from general practitioners who could follow the after-history of operation cases for many years would be very valuable. Mr. WILKIE had succeeded in producing experimentally gastric and duodenal ulcers in cats by retrograde embolism through the gastric and duodenal veins. Appendicitis was now believed by some to be a cause of duodenal ulcer, and might effect it by this way—setting up first an omental inflammation and thrombosis, and next a retrograde embolism of omental venous thrombi. Dr. BOYD had found that fat, given as olive oil or cream before food, was a most efficient remedy for hyperchlorhydria. The PRESIDENT said that duodenal ulcer was a comparatively rare condition, as shown by the statistics given them that night. The sex incidence was of value, and made one diagnose the condition with caution in women. He suggested that those cases of profuse bleeding where operation revealed no ulcer might be due to very shallow erosions which had rapidly healed over. Professor CAIRD replied.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, March 9th, 1911.

Dr. G. A. BERRY, President, in the Chair.

Optic Nerve Tumour.

Dr. HILL GRIFFITH described and illustrated three cases of optic nerve tumour. Two were intradural, the other extradural. In the first case there had been protrusion of the right eye for seven and a half years. Movements were good except downwards. There was a lobulated swelling between the globe and the inferior edge of the orbit. Distinct resistance was encountered. Vision J. 16. The disc was pale and atrophic. At the operation the eyelids and entire contents of the orbit were removed, the eyebrow being preserved. A month after the operation five Thiersch grafts from the patient's thigh were transplanted into the orbit. When seen recently the orbital cavity was well lined with skin, except at one spot. There was no discharge. Professor Lorrain Smith's report was that there were widely dilated lymphatics and lymph spaces in a matrix of vascular fibrous tissue. The larger spaces were lined with endothelium. In the second case there was marked displacement of the eyeball forwards, which had been noticed a few weeks. There was marked optic neuritis in the affected eye, but no haemorrhages. He removed the entire contents of the orbit in one mass. The tumour consisted of small round cells, and the tissue was richly supplied with thin-walled blood vessels, and there were many widely dilated lymph spaces. The third case had had protrusion of the left eye for some years, and latterly it had increased. The eye movements were good. There was recent optic neuritis with blurring of the edge of the disc all round. There were no haemorrhages. Shortly before the operation the vision had fallen to $\frac{6}{12}$, and there was well-marked proptosis. No growth could be felt. The external rectus tendon and outer canthus were freely divided, and then the growth could easily be felt, obviously surrounding the optic nerve. The entire orbital contents were removed. The growth consisted of cylindrical masses, made up of large epithelial-like cells, with a round central nucleus. He strongly recommended the procedure he adopted in these cases.

Morgagnian Cataract.

Mr. JOHNSON TAYLOR read a paper on a Morgagnian cataract in an elderly spinster who had had the condition

in the left eye twenty-five years without any discoverable adequate cause.

The eye, doubtless from long disease, had become amblyopic, and, though the direct pupillary light reflex was quite brisk and the tension normal, the projection was very defective. During the operation, which was a difficult one, owing to the sunken state of the eye, the small size of the cornea, and the narrowness of the palpebral aperture, no trace of a nucleus was discovered; the whole lens was found transformed into a milky fluid, with the exception of some inspissated material lining the capsule, which was removed by repeated introduction of iris forceps; after a subsequent needling the vision was $\frac{6}{12}$ and J. 1.

Two points were insisted upon: (*a*) That operation should not be refused just because the projection was bad, if the direct pupillary light reflex was brisk and the tension normal; (*b*) that prevention was better than cure, and that as a general rule one-eyed cataracts should be operated upon before getting over-ripe, although the other lens was perfectly clear.

Granuloma of the Retina.

Messrs. F. G. THOMAS and G. COATS read a paper on a peculiar form of granuloma of the retina.

The patient, a lad of 18 years, became ill in March, 1908, with influenza. Afterwards he developed pain in the hypogastrium, and suffered from retention of urine and pyrexia. He had severe pain in the left brow, and became drowsy and irritable. Examination of the eyes showed, in the region of the left papilla, an area resembling a greatly enlarged disc, and consisting of a central flat structureless portion, of the colour of fundus elsewhere, surrounded by a ring of swollen nerve fibres. The retinal vessels emerged from the inner edge of this ring. The right fundus was normal. Subsequently a discharge from the left ear developed and he recovered. Nearly two years later he came to hospital again. The eye was blind and glaucomatous, the anterior chamber very shallow, the retina detached. Enucleation was therefore performed. Pathologically an oval yellow mass measuring 4 mm. by 2.5 mm. was found in the stalk of the detached retina close to the papilla. The growth was purely retinal, and consisted of densely crowded cells, mostly slightly elongated. There was very little stroma and no organization within the mass, but on its vitreous surface a small quantity of old organized tissue was found. The corneo-iridic angle was occluded.

Looking to the histological characters alone the growth resembled a sarcoma more than a granuloma, but this diagnosis seemed improbable in view of its small size and slight amount of growth in two years.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, February 24th, 1911.

Dr. E. CAUTLEY, President, in the Chair.

Cases and Specimens.

THE following cases and specimens were shown:—Dr. E. BELLINGHAM SMITH: A case of *Spasmus nutans* in an infant aged 11 months. The movements, which were side to side, were first noticed two months ago, and were followed in a week by nystagmus. There was occasionally a convergent strabismus, and twitchings of the left hand were said to occur. Dr. PORTER PARKINSON: A case of *Congenital dilatation of the colon* in a girl aged 6 years. Except for constipation and occasional colic, the child had been healthy from birth. There was no history of consumption or syphilis in the family. The girl was healthy-looking and not in the least anaemic. *X*-ray photographs, taken after injection of bismuth, showed the great enlargement of the colon, and examination of the stomach by auscultatory percussion and other methods suggested that there was some enlargement of that organ. Dr. E. CAUTLEY: A case of *Cerebral athetotic diplegia* in a girl aged 2¾ years. The family history was negative, but the mother was only 19 years of age when the child was born. At four months the patient could sit up, and this was an important point in favour of the condition being post natal in origin. She cut her teeth quickly and was said to have talked well at two years of age. She could walk a little by herself last October, but was never able to walk well, as her feet turned out. Nine months ago she had a fall, and about that time her back was found curved. For the last four months she had been kept on her back, and for a month or so she was said to have become "strange in her mind." The child was well nourished, and her mental condition was lively, but defective. The pupils showed no abnormality and there was no nystagmus. The fundi were normal. The palatal arch was high and the teeth were well developed. The head was asymmetrical, 18½ in. in circumference, and was always held a little to one side as if there were slight torticollis, while the chin was receding. The hands showed ataxic and purposeless movements while at rest and some inco-ordination on movement. There was a little scoliosis in the mid-dorsal region with convexity to the right. The knee-jerks were exaggerated, especially on the left side. The legs were a trifle stiff and the feet in the position of equino-valgus, but the deformity was easily reduced. The toes were not hyperextended. The gait was ataxic and slightly spastic, and the right leg was somewhat flexed at the hip and externally rotated. There was also incontinence of urine. The condition was probably due to structural damage, possibly by mild encephalitis, of the frontal and parietal regions of the cortex. Mr. D. C. L. FITZWILLIAMS: A case of *Congenital absence of the pectoral muscles* in a girl aged 13 years. Dr. J. W. CARR: A case of *Anorexia nervosa* in a Jewess aged 10 years. She was said to have been healthy until she was 5 years old, when she lost her appetite, had pain in the stomach after food, and began to waste. On admission to the Victoria Hospital last September her weight was 26 lb., and since then she had gained about 1 lb. The child was excessively emaciated, but could walk with ease. She had been sick nearly every day since admission, often five or six times, usually very soon after taking food. Her temperature was generally subnormal, and there was no evidence of disease in any part of the body. Bismuth and radiography showed that there was no obstruction in the oesophagus and no dilatation of the stomach. The bowels acted fairly regularly. Treatment had included isolation and massage, faradism, feeding by nasal tube, gastric lavage daily, starvation and chloretone to produce drowsiness, but the vomiting had continued and the general condition remained unaltered. Dr. A. W. G. WOODFORDE: Specimens from a case of *Delayed chloroform poisoning* in a boy aged 9 years, who was anaesthetized for the removal of an enlarged gland in the right side of the neck, there being no other signs of disease. Anaesthesia lasted about fifteen minutes. On recovering consciousness, he vomited once and passed a comfortable night. On the following day he vomited twice, but took the usual light diet well and appeared to be in a satisfactory condition. Two days later he had slight vomiting on three occasions. The next morning he ate part of his breakfast, and was then noticed to be in rather a collapsed state. He reacted well to simple restoratives and slept heavily during most of the day, but was never unconscious. In the evening he vomited, and later became unconscious, respiration ceasing two hours afterwards. With artificial respiration the heart continued to beat for five hours after the breathing ceased. The urine, tested shortly before death, contained a large amount of (?) acetone. *Post mortem* a gross, fatty degeneration was found in the liver, which was golden yellow in colour, and in the heart, kidneys, and spleen. A few submucous haemorrhages of small size were seen in the stomach. Caseating tubercle was found in one of the bronchial glands, and also in a mesenteric gland. Sections of the liver, heart, muscle, kidney, and spleen all showed an extreme grade of fatty degeneration. Dr. E. I. SPRIGGS and Dr. J. B. DE W. MOLONY: A case of *Angiomata of the left loin and leg* in a girl aged 4½ years. The condition was present at birth. Except for enlarged inguinal glands on both sides, the child showed no signs of other abnormalities. Dr. C. RIVIERE: A case of *Congenital aortic stenosis* in a boy aged 5½ years, with no history of rheumatism. The heart appeared to be of normal size, but the impulse was forcible. There was a thrill over the aortic area, but no pulsation. A rough systolic murmur was audible over the whole heart, but of maximum intensity over the aortic area, and conducted a long way into the large arteries. The aortic second sound was clear, and there was no evidence of a patent ductus arteriosus. The pulse, 100 per minute, appeared to be rather small and soft. Dr. J. L. BUNCH: A case of *Lichen spinulosus* in a child aged 2½ years.

Oculo-motor Type of Polio-encephalitis.

Mr. S. STEPHENSON read a paper on the oculo-motor type of polio-encephalitis. He drew attention to a group of

cases of squint in young children, which he believed to be due to polio-encephalitis. Any of the extrinsic muscles of the eye might be affected, but in two-thirds of his cases the external rectus was alone involved. The intrinsic musculature of the eye was seldom attacked. The squint, which was of paralytic nature, was associated in about one-third of the cases with fits, convulsions, stupor, or other symptoms indicative of an affection of the brain. The common form of encephalic strabismus was apt to be confused with the ordinary form of concomitant convergent strabismus, although the age incidence of the two affections was different. For purposes of differentiation a careful examination of the corneal reflexes was all-important. The cases and paper were discussed by the PRESIDENT, Dr. H. SKELDING, Mr. D. C. L. FITZWILLIAMS, Dr. L. GUTHRIE, Dr. F. LANGMEAD, Dr. C. R. BOX, Dr. C. W. CHAPMAN, Dr. PARKES WEBER, Dr. J. BLUMFELD, Dr. E. BELLINGHAM SMITH, Dr. J. D. ROLLESTON, and Mr. P. L. MUMMERY.

BALNEOLOGICAL AND CLIMATOLOGICAL SECTION.

AT a meeting on March 1st, Dr. T. F. GARDNER, President, in the chair, Dr. RINGROSE GORE (Llandrindod Wells), in a paper on the *Climatic and balneological treatment of neurasthenia*, said that in no disease were the details of general treatment of greater importance. One essential factor in treatment was time, and many failures resulted from non-appreciation of this fact. It was very important to impress this upon patients; otherwise they became unduly depressed when a short course of treatment failed to effect a cure. Patients in a marked debilitated state of health required rest in bed combined with massage and careful dieting before being subjected to spa treatment. On the other hand, neurasthenics, in whom the disease was dependent on some chronic abdominal condition, such as gall stones, chronic appendicitis, or some abdominal displacement, should be recommended spa treatment before and not after operation. Practically all cases of neurasthenia had a toxic basis, and a very large number of cases were due to or associated with some form of digestive trouble. It was in these cases that properly regulated spa treatment was of signal value. At Llandrindod Wells the chief treatment consisted in drinking a natural saline water every morning. The action of this water was mainly one of gastro-intestinal lavage, which aided the elimination of toxic products. There was also a chalybeate spring which was prescribed for its tonic effect. High-frequency currents, douches of different kinds, and reclining baths at various temperatures, were all valuable accessory methods of treatment, and flushing of the colon as practised at Plombières was beneficial in cases in which mental depression was a prominent symptom. The choice of climate depended to a great extent upon the stage of the disease and the age of the patient. In most cases a preliminary rest cure was advisable, and subsequently a stay at a quiet bracing station should be recommended. Mountain or sea air were to be preferred unless they induced insomnia. In the summer it was easy to find a suitable climate in the British Isles, but in winter difficulty arose, inasmuch as neurasthenics required an open-air life. Young patients, especially those on the road to recovery, did well at an Alpine resort, so long as they were content to keep to the milder forms of exercise. Dr. BUCKLEY (Buxton) said that there was one important mode of treatment which was of extreme value in neurasthenia, especially if accompanied with restlessness and insomnia—namely, the cold pack at a temperature of about 90°. Dr. PRESTON KING (Bath) considered that in the treatment of neurasthenia change was all-important, with rest and, as far as possible, absence of worry. Physical disease, as colitis, arthritis, or affections of the heart, must be treated. Properly used, suggestion was a distinct help to cure, not only in neurasthenia, but in all illness. Dr. EDGCOMBE (Harrogate) regretted that the author of the paper had not defined clearly what was meant by the term "neurasthenia." The more severe cases, characterized by profound fatigue, formed a well-marked group, the main factor in the treatment of which was rest. The milder cases were so ill-defined and protean in their manifestations that it was impossible to formulate definite rules for treatment. Each case must be treated on its merits; the tact and personality of the physician in charge was not the least important factor in procuring a good result. Dr. WILLIAM ARMSTRONG (Buxton) considered that neurasthenia depended upon disturbance of the sympathetic nervous system, in some cases preceded, in nearly all followed by, autointoxication. He strongly advocated direct treatment of the cervical ganglia of the sympathetic in minor cases by means of ionization of the neck; in more severe ones by anaesthetic ionization followed by light application of the electric cautery. For the autointoxication nothing was so helpful as the drinking and inhalation of strong radium emanations in water (8,000 machi units per litre), which greatly increased nervous force and also strongly stimulated the excretion of waste products, especially increasing the output of carbonic acid. Dr. REES (Llanwrtyd Wells) alluded to the fact that preceding speakers had not mentioned influenza as a possible cause of neurasthenia; in his opinion cases of neurasthenia had been much more numerous since the advent of influenza in this country. He concurred with the previous speakers that it was desirable to have a definite conception as to what conditions should be included under the term "neurasthenia." In the absence of any authoritative pronouncement on the matter, he had for himself adopted the meaning of the word from its Greek derivatives, which signified lack of nerve force. The term "neurotic," on the other hand, he had always considered as applicable to a highly excitable and unstable state of the nervous system associated with exaggerated reflexes. Dr. F. G. THOMSON (Bath) was of opinion that the first essential in the treatment of neurasthenia was to get a clear mental conception of the nature of the disease. Dr. Gore's statement that it was due to gastro-intestinal toxaemia was not borne out by facts. It was not the *bon vivant* who became neurasthenic, but the patient who, after years of anxiety and worry, eventually broke down under the strain. Neurasthenia was a psychosis of exhaustion, and the primary factor in treatment must be complete mental and physical rest. The great majority of severe cases were bad sleepers, and such cases were likely to derive far more benefit from a sedative than from a bracing climate. The PRESIDENT agreed with Dr. Preston King that much in the treatment of neurasthenia depended on the personality of the physician and the wise use he made of suggestion suited to each particular case.

ULSTER MEDICAL SOCIETY.

THE fifth meeting of the Society was held in the Medical Institute on February 9th, the President (Sir P. R. O'CONNELL, M.D., D.L.), in the chair.

Obscure Pyrexia.

Professor LINDSAY read a paper in which he said all practitioners occasionally encountered cases where for a considerable time the only objective fact was a continued pyrexia of doubtful causation. Physiologists and pathologists were not fully agreed as to how far pyrexia was due to increased heat production or diminished heat loss, nor to what extent it was simply an irritative disturbance of the thermo-taxic mechanisms of the body or one of the protective arrangements of the organism. The causes of pyrexia were very numerous, but probably two of these causes covered most of the ground concerned with "obscure pyrexias." These were infection—using that word in its widest significance—and nervous influences, the former being by far the more potent and far-reaching. Certain causes of obscure pyrexia, very frequent in some countries, hardly concerned the Irish practitioner. Examples of these were malaria and Malta fever. An aphorism attributed to the late Sir William Jenner might be recalled with advantage:

> A patient who has suffered for one week from continued fever, without other physical sign, is the subject either of typhoid fever, pus-formation, or tuberculosis. A patient who has suffered for a month from continued fever, without other physical sign, is the subject either of pus-formation or tuberculosis. A patient who has suffered for two months from continued fever, without other physical sign, is the subject of tuberculosis.

That aphorism was no bad starting point from which to undertake the investigation of a difficult case of "obscure pyrexia." It at least secured that three of the most important causes of this condition would receive adequate attention. Certain causes of continued pyrexia were not so much "obscure" as easily overlooked—that is, if duly

inquired for, their detection did not present any real difficulty. Of such causes there might be mentioned cholecystitis, pyelo-cystitis, secondary syphilis, septic conditions of the mouth, throat, and naso-pharynx, and acetonuria. These conditions were fertile causes of "obscure pyrexias," but could be discovered if adequate inquiry were made and modern methods of diagnosis fully employed. Ulcerative endocarditis was another cause of "obscure pyrexia," which was easily overlooked, especially the chronic form described by Osler. Rheumatism might be very latent in some of its manifestations, especially in children. The state of the heart might give the required hint. Pneumonia, again, might be a source of error, either from latency of the physical signs or from a preponderance of cerebral, typhoid, or gastro-intestinal symptoms. Of cases wrongly admitted to fever hospitals as typhoid fever, pneumonia accounted for a large number and usually headed the list. Influenza was a frequent cause of an "obscure pyrexia," but was oftener erroneously supposed to be present than overlooked. Few terms more often covered a multitude of diagnostic sins than "influenza." The influenzal pyrexia was not really very difficult of recognition. The onset was always more or less definite; signs of defervescence usually appeared by the fourth, fifth, or sixth day, and were never delayed beyond the tenth day. The patient felt irritable and depressed, and the blood showed a leucopenia, unless there was a mixed infection, usually with the pneumococcus. A most interesting yet difficult question was how far intestinal autointoxication was a frequent cause of an "obscure pyrexia." He had seen a good many cases where this seemed the only probable explanation. A good many of these cases were probably examples of *Bacillus coli* infection. It was said that a leucocytosis was always present in these cases, a point which might help to distinguish them from typhoid fever. Pernicious anaemia was another cause of "obscure pyrexia," but the aspect of the patient and the blood examination would serve to clear up these cases. It was well to be watchful for the possibility of malignant disease in such cases. This was no uncommon error, and one not always easily avoided. How far the terms "nervous fever" or "hysterical pyrexia" were valid, was a moot point. He was rather inclined to look askance at the theory which underlay these expressions; yet it could hardly be doubted that there were persons whose thermotaxic mechanisms were unduly mobile, and who developed relatively high temperatures from slight causes of disturbance. The practitioner should, however, be on his guard when told that "So-and-So is always having a high temperature," lest haply some day he should overlook an incipient pneumonia, scarlatina, or typhoid fever. The three conditions mentioned in Jenner's aphorism—typhoid fever, pus formation, and tuberculosis—were the more common causes of an "obscure pyrexia," and often involved the most difficult of all the problems which arose in connexion with the subject. The practitioner must recognize that typhoid fever was one of the most protean of diseases, and that all the most characteristic signs and symptoms might be absent. Initial headache, gradual onset, the eruption, diarrhoea, tumid abdomen, dicrotic pulse, characteristic course of the temperature, might all be wanting. In his experience the following points were the most trustworthy: (*a*) A history of slight epistaxis, slight bronchial catarrh, giddiness, and deafness; (*b*) enlargement of the spleen; (*c*) Widal's test, which was often of essential service; (*d*) the detection of the specific organism in the urine. The detection of pus was often a most difficult matter. The temperature, the aspect of the patient, and the general symptoms might all be misleading. History and some probable source for pus were most important. Pain and tenderness were rarely quite absent. Leucocytosis was a help, especially in excluding typhoid fever. Tuberculosis might long evade detection, even when every care was taken and all the modern methods of diagnosis put in operation. Acute miliary tuberculosis was especially difficult of early detection. Cyanosis was an important hint in the diagnosis of this condition. Tubercles might be discovered in the choroid or in the spinal fluid. Calmette's, von Pirquet's, and Moro's tests were usually helpful, but all involved possible fallacy. Tuberculous meningitis was often difficult of prompt detection, and the distinction from typhoid fever might tax diagnostic acumen to the utmost. The psychical condition of the child—usually one of restlessness and irritability—the decubitus in bed, Kernig's sign, and the persistence of headache after the advent of delirium, and the state of the fundus oculi, were among the most helpful points. The examination of the spinal fluid might determine the nature of a doubtful case. Ordinary pulmonary phthisis was an occasional cause of an "obscure pyrexia," but in general the history, the state of the chest, the examination of the sputum, and the application of one or other of the tuberculin tests would make these cases clear, though time might be necessary for arriving at a definite diagnosis. Professor Lindsay related various cases in illustration of his views.

A number of Fellows joined in the discussion—Sir JOHN BYERS, Dr. DARLING, Dr. GARDNER ROBB, Dr. MCKISACK, Dr. KEVIN, Mr. SINCLAIR KIRK, and Dr. CLEMENTS. Sir John Byers laid stress on modern aids to diagnosis, and mentioned some obscure cases in which the streptococcus was found to be the causative organism. Dr. Darling mentioned some cases in which the source of mischief lay in the pharynx. Dr. Robb gave his experience of the value of Rousseau's test in typhoid fever, which he found a reliable confirmatory sign, even early in the disease. Dr. McKisack enumerated some cases in which the term "gastric fever" seemed applicable.

CLINICAL SOCIETY OF MANCHESTER.

Tuesday, February 21st, 1911.

Mr. J. HOWSON RAY, President, in the Chair.

Treatment of Diseases of Lymphatic Glands and Spleen.

DR. GEORGE R. MURRAY read a paper on the treatment of some diseases of the lymphatic glands and spleen. In Hodgkin's disease he laid stress on the necessity of carefully examining the mouth, nose, ears, and skin, and on the avoidance of all mental and bodily strain. He referred to the ordinary lines of treatment by drugs, and discussed the advantages and disadvantages of surgical treatment, removal of enlarged glands, and treatment by *x* rays. His experience of surgical treatment had not been very encouraging, and, unless there was pressure on important nerves or vessels by the enlarged glands, he would not advise it. He had seen most satisfactory results follow the use of the *x* rays, but thought the best results would be got if arsenic were administered at the same time. The rays reduced the gland enlargement as nothing else would, but unfortunately the patient's general condition did not show a corresponding improvement. Whatever line of treatment was adopted, however, cure could not be attained; the disease could only be kept under control. The apparatus used should be a powerful one, and the rays given two or three times a week for periods depending on the condition of the patient. Several cases were quoted, amongst them being that of a lady with marked enlargement of the mediastinal glands, in which the rays had produced a very wonderful improvement in the condition of the glands, her general condition, however, being very little better. In leukaemia, when there was a rise of temperature, the patient should be absolutely confined to bed and great care taken to avoid injury to the spleen. He strongly urged open-air treatment for these cases. Arsenic should be given in large doses; in one case he had given 25 minims of the Fowler's solution three times a day. The *x* rays led to a surprisingly rapid reduction in the size of the spleen and markedly controlled the excess of white blood corpuscles. The applications should be persisted in for two or three months and then given once a month. Here, again, the rays did not lead to a cure, and where relapses occurred they frequently proved valueless. In lymphatic leukaemia the acute cases ran a very rapid course and the chronic ones were very protracted. Cases were quoted to prove that in this condition the *x* rays were of little value. They certainly reduced the white blood corpuscles, but, at the same time, there was a ery marked reduction of the red. In splenomegaly the *x* rays were of no value. He thought excision of the spleen held out the best chances for the patient. Where ascites was present tapping must be resorted to.

Dr. C. H. MELLAND said that his experience of removal of one set of glands, in Hodgkin's disease, was that it frequently led to a rapid lighting up of the disease in other glands. Arsenic had yielded excellent results. It

should be given in large doses, stopped for a while, then large doses again, and finally the patient kept on a course of small doses. *X* rays he thought were effective, but he preferred to start with arsenic, and when this appeared to be failing in its effect to then go on to the rays. In leucocythaemia he regarded arsenic as invaluable. He had seen the leucocytes reduced, in ten months, from 150,000 to 800 per c.mm. by its use. The reduction, too, was usually accompanied by an improvement in the general health of the patient—a fact which was often absent in Hodgkin's disease. In splenic anaemia he thought arsenic should be given in increasingly large doses. In one case under his care he had observed a reduction in the size of the spleen to one-half what it was when the arsenic was started, and this in two months, and the accompanying anaemia had entirely disappeared. A recurrence of the condition would make him seriously consider the advisability of surgical interference.

Dr. P. R. COOPER said he regarded lymphadenoma as being very closely allied to lymphosarcoma, and acting on this opinion he had some years ago treated an advanced case of the former with injections of Coley's cancer fluid. He started with injections of ½ minim, and finally was giving 5 minims. The injections had on two occasions been followed by serious collapse. He was of opinion that treatment with vaccines would most probably in the future prove to be of value.

The PRESIDENT briefly referred to the effects produced by the injection of Coley's fluid. He had seen collapse follow the injection of ½ minim, while 2 or 3 minims had no effect.

Dr. A. A. MUMFORD asked Dr. Murray if the *x* rays had proved of any value in the treatment of enlargement of the thyroid gland.

Dr. MURRAY, in reply, said he had not observed the effects of surgical treatment, referred to by Dr. Melland, but would bear it in mind. He pointed out to Dr. Cooper that the structure, microscopically, in lymphadenoma and lymphosarcoma had been definitely proved to be entirely different. The *x* rays had proved of no value in the treatment of enlargement of the thyroid.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

Wednesday, February 15th, 1911.

Mr. W. MORLEY WILLIS, President, in the Chair.

Syphilitic Throat and Skin Lesions.

A DISCUSSION on this subject was opened by Mr. J. MACKIE, who confined his remarks chiefly to the diagnosis between syphilitic, tuberculous, and malignant disease of the throat and larynx. It was rare to see a chancre in this region; on the other hand, it was a favourite site for secondary and tertiary manifestations of syphilis. The secondary stages did not last long, and readily responded to treatment. In the tertiary stages gummata usually appeared on the posterior surface of the uvula, the palate, and the base of the epiglottis. The importance of the family doctor, who knew the history of the patient, was emphasized in the question of diagnosis. In doubtful cases potassium iodide frequently cleared the diagnosis. Again, a careful examination of the chest would often reveal the presence of tubercle.

Mr. J. P. GRAY said primary chancres were very rare in the region of the throat; they were accompanied by great enlargement of the cervical and submaxillary glands. After six weeks secondary manifestations appeared, chiefly as (*a*) multiple, slightly infiltrated mucous patches on the fauces, or as (*b*) superficial ulceration of the mucous membrane accompanied with rather deeper infiltration. These symptoms were seen more commonly in women than in men, because the men, as a rule, were already under treatment, and so often escaped. Five years after infection gummata might be found as tumours infiltrating the surrounding tissues. As these frequently arose behind the soft palate they often escaped detection. Moreover they broke down with surprising swiftness, leaving a deep ragged ulcer, sometimes involving most of the uvula and one side of the pharynx. As this healed it led to serious deformities, in some cases adhesions almost entirely shutting off the post-nasal space from the pharynx. Syphilitic rhinitis in congenital disease was very amenable to treatment. The treatment consisted in giving mercury and iodides, and in all cases ordering a mercurial lotion as well.

Dr. F. H. JACOB dealt chiefly with syphilitic skin lesions and the bacteriology of syphilis. The organism was best examined through a dark ground condenser. Lupus was often difficult to diagnose from syphilis; the chief aids in diagnosis were the pressure of a watch-glass, which showed the apple-jelly granulations in lupus, the tuberculin test, the microscope, and the Wassermann reaction. The latter reaction had shown that antisyphilitic treatment should be continued for three years; also, that the best methods of treatment were (1) "606," (2) the inunction method, (3) the injection method, (4) by means of suppositories, and that (5) oral treatment was the slowest and least satisfactory. In the tertiary stages potassium iodide should be pushed to large doses—for example, ʒj three times a day. Very often arsenic added to a mixture of iodide and mercury proved of great value.

Drs. C. H. CATTLE, STANLEY GREEN, and PARRY JONES continued the discussion.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on February 17th, Dr. J. DOBSON in the chair, Mr. H. COLLINSON read a paper on the *Acute aspects of appendicitis in children*. Dr. T. CHURTON showed two cases of *Graves's disease* and made some comments on the prognosis, drawing attention to the fact that it was in many cases favourable. He related the case of a woman who had been under his observation for thirty-three years. She recovered from the first attack in twelve years, less completely from a second attack. She died in 1910 from (it was said) heart disease and dropsy, at the age of 54. Another patient still under observation had been free from symptoms for eleven years. Dr. T. WARDROP GRIFFITH gave a short demonstration of the information obtained by the use of the *Clinical polygraph* in cases of actual and of apparent pulsation of the liver, in connexion especially with cardiac disease. Two cases were especially commented on in which there was great hepatic enlargement. In one of these, in which there was a pulse of the continuously irregular type, with a jugular pulse of the ventricular variety, there was extreme hepatic expansile pulsation, which was shown to be also of the positive or ventricular character. In another case, in which the enlargement was quite as great, the pulsation of the liver was shown to be apparent only, and due to an upward drag on the liver exercised on that organ by the contraction of the ventricles. In a third case an auricular as well as a ventricular wave was shown. The bearing of these observations on diagnosis was briefly pointed out. Mr. H. SECKER WALKER showed a case of *Chronic glaucoma*, affecting both eyes, for which Herbert's small scleral flap operation had been done with successful results ten weeks previously; also a case of *Excision of the laryngeal sac for chronic dacryocystitis*. Mr. J. A. COUPLAND showed a girl, aged 18, with an *Ulcer exposing the inner end of the right clavicle*. The ulcer, which was of seventeen months' duration, had firmly healed under complete rest with fixation of arms, but recurred in two months. The ulcer showed no characteristics of syphilis or tubercle and did not react to antisyphilitic treatment. It was suggested that it was artificially produced by the patient herself. Mr. W. THOMPSON showed a boy aged 12 in whom four years ago the greater part of the right tibia was removed for *Acute osteomyelitis*. The upper epiphysial line of the tibia had been destroyed, and it was 3 in. shorter than the other tibia. The fibula was ½ in. shorter than the other, and had overgrown the tibia both above and below. Mr. W. GOUGH showed a *Villous tumour* removed from a woman who had had several attacks of painless, profuse, paroxysmal haematuria. Through Nitze's cystoscope a small tumour was seen at the left ureteral orifice. A large Kelly's cystoscope was then passed, and the tumour was avulsed by means of a pair of long-nibbed forceps. Removal left only one small raw point. Mr. H. LITTLEWOOD and Mr. S. W. DAW showed a boy aged 12 in whom there was a massive *Keloid of the neck* following burns from ignition of a celluloid collar two years ago. The

tumour began to appear as the scar was healing. Mr. G. CONSTABLE HAYES showed a case of *Disease of the ear and nose.* The patient was a woman aged 24 who had had a discharge from both ears from childhood. She had suffered from snuffles and sores around the mouth as a baby (marked scarring at angles of mouth). The right ear showed complete destruction of the membrana tympani and ossicles. The opening of the Eustachian tube was seen in the middle ear. Watch was heard at 5 in. The left ear showed an aural polypus presenting at the external auditory meatus, with its origin from the attic. Watch was heard at 15 in. The nose showed extreme atrophy of ethmoid with rhino-pharyngitis sicca. Mr. H. COLLINSON showed a case of *Bismuth poisoning after the use of Stiles's paste.* Cases and specimens were also shown by Dr. E. F. TREVELYAN, Mr. J. STEWART, Dr. J. B. HELLIER, Dr. R. A. VEALE, Mr. MICHAEL A. TEALE, Dr. W. H. MAXWELL TELLING.

A CORRECTION.

IN the report of the discussion on low blood pressure in the Medical Section of the Royal Society of Medicine on February 28th, published in the JOURNAL of March 11th, page 558, the remarks made by Dr. W. Bezly Thorne were incorrectly attributed to Dr. G. Oliver.

Reviews.

THE ARMY MEDICAL OFFICER IN WAR.

MILITARY regulations, and especially military medical regulations, make very dull reading, and yet a medical officer on active service must have a fairly good working knowledge of them if he does not wish to find himself severely handicapped, as well as a source of trouble to those around him. To make a study of the regulations attractive Oberstabsarzt WITTMANN has written a diary of a medical officer in a future war.[1]

The supposed author of the diary is appointed to the charge of a regiment on mobilization, and, being of a methodical turn of mind, keeps notes of all daily occurrences of interest during the war. The hero of the work, on receiving the order to mobilize, reports himself to the regimental commander, and is permitted to inspect the mobilization time-table. Remarking incidentally that it would have been much better to have allowed him to study the scheme quietly during peace time, he proceeds to draw up his own plans for inspecting the men of the regiment, taking over the regimental medical stores, and arranging for his own field service kit. The various duties are carried out methodically according to the mobilization scheme, and on the appointed day the regiment marches out of barracks and proceeds by railway and road to join the main army in the area of concentration. This portion of the narrative emphasizes the importance of the medical officer's sanitary duties on the march, in billets, and bivouacs. During the strategical concentration several serious cases occur among the troops, and the men are transferred to the proper hospitals, the necessary formalities being described.

The work of the medical service in a battle, an attack on a prepared position, is most graphically depicted. Medical officers of our army and Territorial Forces would be interested in the description of the German method of establishing a dressing station and providing ambulance transport. For the latter purpose any kind of wheeled transport which can be found in the neighbourhood is collected and adapted for the conveyance of sick by improvised fittings; needless to say, very few vehicles can be found, as the inhabitants have removed nearly all of them. In order to equip the dressing station the services of half a company of infantry are obtained; under the directions of the medical officer these men search the houses in the village and collect bedding, cooking utensils, lamps, and, in fact, anything which might be of use. To the great annoyance of the inhabitants, these articles are loaded up on the requisitioned wagons and driven off to the site selected for the dressing station. The impossibility of rendering medical assistance to the wounded during the actual fighting is clearly brought home to the reader.

Field hospitals having taken over the wounded and replaced some of the expended surgical stores, the regimental medical detachment pushes on and rejoins its unit. At each town or village the medical and surgical supplies in the place are requisitioned to complete the deficiencies. Shortly afterwards another battle is fought, but this time the army is defeated and has to beat a hasty retreat. The medical arrangements during a retirement, especially with reference to the disposal of wounded who cannot be carried off, are detailed in a highly realistic manner. The army then halts, and during this time one battalion is found to have become infected with typhoid fever; this affords an opportunity for describing the measures which should be adopted in similar circumstances.

In the next battle the hero is himself severely wounded, and is evacuated by slow stages to the home territory. He gives a short description of the hospital arrangements at each halting place, and in this way gives a fairly complete sketch of the medical service on the lines of communication. Having recovered from the effects of his wounds, the officer is next sent to duty at one of the posts on the lines of communication, and the opportunity is taken of briefly referring to the nature of the duties in these posts. From here he proceeds to do duty with a besieging army, and details the sanitary precautions which should be taken for troops occupying a stationary position. The medical arrangements during the assault are also fully described.

Three sketch maps of the battles are given at the end of the book which make the descriptions of the medical arrangements much more realistic.

For a German reader a most valuable feature of the book lies in the fact that whenever the medical officer has to take any action a marginal reference is given to the authority under which the particular act is carried out. In his introduction Wittmann says that he has tried to create as many different probable situations as possible, and has then made his hero adopt what is apparently the best course under the circumstances. Wittmann, however, points out that there may be other, and possibly better, ways of solving each of the problems, but at all events those he gives are feasible and in accordance with the German regulations.

There are two appendices. One contains a list of the articles of personal equipment which a medical officer should provide, and tells him where they should be carried; this list should prove of the greatest service to any one who is called on to proceed on active service for the first time—that is, if he can manage to carry all the things which Wittmann recommends. The other appendix shows the mobilization allowance and monthly pay of all medical officers according to the position which they may happen to fill.

The book is written in a light and attractive style which makes it most interesting to read; it gives a great insight into German methods in the field. To a German medical officer of the reserve who wishes to keep himself up to date the work should be of the greatest help, as Wittmann has really succeeded in presenting a dull but necessary subject in an attractive and at the same time most instructive form.

[1] *Der Sanitätsdienst im Zukunftskrieg: ein Kriegstagebuch.* By R. Wittmann, Oberstabsarzt der Königlich. bayerischen Sanitäts-inspection. Berlin: Mittler und Sohn. (9½ by 6½ in.; pp. 163, with sketch maps. 3s. 6d.; unbound.)

BIOLOGY.

THE general teaching of medical students has formed a butt for many shafts of hostile criticism, and no part of it more so than the preliminary training in biology, physics, and chemistry. The amount of each of those subjects which should be taught is a much-debated question; as to the manner, there ought to be more unanimity. It should be recognized that the medical student does not want a long course on biological classification, the periodic law, or mechanics. These matters are useful enough and interesting in a general way, but their practical utility is not great; they do not, as maintained by some, add culture, but are at best a "mere smattering." To such medical men as are ambitious enough, and have time to spare, to desire a wider academic culture, the way of an arts or science degree is open. In biology the field is wide enough to provide material for a

three or even six months' course, which will include nothing that is not of essential importance to every medical student, and which will not only enable him to appreciate more fully his later studies, but will also be of use to him throughout his whole career. This has appealed strongly to Professor MCFARLAND, of Philadelphia, who has just published a new textbook of biology.[2] The book is practically a new departure, and its scope and treatment are unlike those of any with which we are familiar. Starting with the principle that medical science is a branch of biology, and should be studied as such, the author, who it may be remarked holds the Chair of Pathology in his university, proceeds to weave an entrancing story around man as a biological unit. The tale is told with characteristic American verve; a touch of melodrama is skilfully added here and there, but not more than is sufficient to arouse a commendable scientific curiosity and to stimulate a desire for a fuller understanding. That, we take it, is a fit and proper aim for an introductory volume. The book, however, is not intended exclusively for medical students, but appeals to the general reader; yet we cannot admit that it has such strong claims on the latter, for the very method of treatment which renders it so admirable for the one lays it open to the charge of being fragmentary and incomplete for the other. Thus the various forms of animal life are dismissed in sixty pages. These contain more than sufficient wealth of illustration for the medical reader, but are inadequate for a more general knowledge. The comparative system is used throughout with strikingly successful results. There is a large mixture of the historical and philosophical element, which, while it adds to the general interest, might have been somewhat reduced. Thus it is unnecessary prolixity to give a list of the six Greek philosophers who flourished in the sixth century B.C., and who "busied themselves with cosmical speculation, and offered various evolutionary hypotheses for the genesis of our planet." In his opening chapters the author follows the usual lines, dealing with the criteria and manifestations of life, and the cell and its various functions. The morphology of the higher organisms is, as already remarked, dealt with in a single, albeit the longest, chapter. Reproduction and development are fully and instructively treated. Four short chapters are devoted to the history of evolution and its diverse applications. The concluding chapters are of most particular medical interest, and occupy more than a quarter of the book. An excellent account is given of the biological and medical aspects of subjects such as parasitism, infection and immunity, mutilation and regeneration, and senescence and death. Each and all of these subjects, treated from the comparative biological point of view, will be read by the medical student with much greater interest and profit than the usual fare which is provided in the shape of the detailed structure of the earthworm or cockroach. Although usually taught in the bacteriology class, the subject of infection and immunity is essentially biological in the strict sense. It is a phase, and an important one, of the struggle for existence. For satisfactory study, however, it involves a knowledge of medicine, and is thus beyond the scope of an elementary student. At the same time, it must be remarked that the book is not explicitly intended for the elementary medical student, and it certainly contains much that would be quite too advanced for a first reading. The principle, nevertheless, is excellent, and we know of no other textbook better worth recommending.

We are glad to welcome a second edition of PARKER and HASWELL'S *Textbook of Zoology*[3] We well remember the feeling of pleasure and satisfaction with which we made our first acquaintance with this book, and it has remained a familiar and useful friend for many years. The student of zoology who has passed beyond the elementary stage has no great choice of a book to suit his extended needs. Between the introductory textbooks, of which there are dozens, and the elaborate many-volume works, Ray Lankester's *Treatise* and the *Cambridge Natural History*, there is a gap which is but indifferently well filled. Unless he is specializing in some particular groups, the student finds these latter works rather voluminous, apart from the fact that they may be quite beyond his means. A book of intermediate size and scope, dealing with the subject in a comprehensive yet compact fashion, becomes a real necessity, and Parker and Haswell's textbook meets this need in a satisfactory and fitting manner. Originally published twelve years ago, it has continued to be a standard work, and the present edition is in the main practically unaltered. A considerable number of new illustrations have been added, and in each case the addition seems to be an improvement. Even in the first edition, however, the excellent illustrations were quite a feature. The advance of knowledge within the last dozen years has necessitated the rewriting of several portions of the book, and this is, perhaps, more apparent in the systematic than in the descriptive sections. In the latter a few features are noticeable at first sight, and we may instance here the account of the nephridial system in Polychaet worms, founded on Goodrich's well-known work. In the systematic sections, however, numerous changes are apparent, and the authors are to be congratulated on having kept so well abreast of the times. In view of the kaleidoscopic way in which the names and classification of even the commonest organisms have changed about in these latter days we fancy that taxonomy and nomenclature will prove a grievous stumbling-block to writers of textbooks for some time to come. It seems impossible for any author to keep himself informed of the wholesale and almost daily alterations that are made. Parker and Haswell have succeeded fairly well in this respect, but not completely, yet it is possible that in many cases they have preferred an older name to its more modern, and perhaps less stable, equivalent. The general arrangement of the book remains the same as before. A type, in some cases more than one, of each class of the various phyla is described in detail; its systematic position and relation to other allied organisms is discussed, and this is followed by a classification and general summary of the characteristics of the group. Intermediate types and aberrant forms receive due attention. In addition, there are special chapters on the general structure and physiology of animals, and the history and philosophy of zoology. A very regrettable feature of the present edition is the large number of errata, which can hardly fail to confuse and mislead students. The haste with which the new edition was prepared may account for their presence. The majority are fortunately of no great importance, but several occur in the spelling of proper names. In addition to those noted in the errata slips we might point out the occurrence of *Leuckhart* for *Leuckart* on pp. 262 and 263, *Dicroelium lanceolatum* for *Dicrocoelium lanceatum* on p. 285, and the jumbling of the classification of the *Coelenterata* on p. xxv, where the *Hydrozoa* have been mixed up with the *Alcyonaria*.

Dr. PRUDDEN'S *Story of the Bacteria*[4] is intended obviously for the lay reader, but it is calculated to arouse the interest of even well-informed medical men. It is told in the characteristically forceful American way which aims at striking the attention by an unlimited appeal to the imagination on the one hand and a skilful handling of the facts on the other. Here is no prosy account of the morphological characters and cultural reactions of cocci and bacilli; they are made to live and disport themselves before the reader's eyes, their good or bad qualities are openly exposed and they receive their meed of praise or blame in no measured terms. All the bacteria pathogenic to man are dealt with in interesting detail, and the account is in every case sufficient to give a reasonably lucid idea of what they are, what they do, and how they do it. A chapter bearing the alluring title of "a round-up of undesirables" contains short remarks on syphilis, rabies, malaria, and small-pox. "A dangerous neighbor" invites conjecture and is found to refer to our familiar enemy, the common housefly, whose misdeeds are dilated upon. The farmer's friends, the nitrogen bacteria in the soil, also receive poetic treatment, and in Dr. Prudden's apt phrase-

[2] *Biology: General and Medical.* By Joseph McFarland, M.D. Philadelphia: W. B. Saunders Company. 1910. (Demy 8vo, pp. 440. 7s. 6d.)

[3] *A Textbook of Zoology.* By T. Jeffery Parker, D.Sc., F.R.S., and William A. Haswell, M.A., D.Sc., F.R.S. In 2 vols. Vols. i and ii. London: Macmillan and Co. 1910. (Med. 8vo; vol. i 878 pp., vol. ii 748 pp. 36s.)

[4] *The Story of the Bacteria.* By T. Mitchell Prudden, M.D. Second edition. New York and London: G. P. Putnam's Sons. 1910. (Cr. 8vo, pp. 242. 3s. 6d.)

ology are designated agricultural conjurers. The titles of the chapters are an indication of the delightful vein in which the whole book is written, but beneath the free-and-easy manner the serious purport of the facts is never concealed. The author's information is in every case well up to date, and his recommendations are based on sound hygienic principles. His forcible style can hardly fail to carry conviction, and we could wish that the book should fall into the hands of some of those members of the public who talk glibly of "germs."

Dr. FRIEDERICH KANAGIESSER has written a small but comprehensive volume[5] on vegetable poisons, which ought to meet a ready welcome from those interested in the subject, and more especially medical men. He has brought together and arranged in a systematic and satisfactory fashion a varied assortment of information which is usually scattered throughout larger works and not always easy of reference. At the same time he has condensed the matter to a very small bulk, giving little more than the absolute essentials. There are three fairly common classes of cases which medical men are called upon to diagnose and treat. The first of these results from the eating of poisonous or harmful plants, particularly by young children. A list is given of over sixty kinds of plants which are known to have caused symptoms of poisoning, and where fatal results have followed the species is specially marked. Besides such well-known poisonous plants as monkshood, nightshade, hemlock, foxglove, hellebore, and poppy, the list includes several other common plants the poisonous nature of which is not so generally recognized, such, for instance, as the horse chestnut, anemone, marsh marigold, sheep sorrel, potato, and mistletoe. In most cases the harmful substance is contained in some particular part of the plant, very commonly the berry, or at one season more than another. The symptoms in the majority of cases are those usually associated with gastro-intestinal irritation, and the treatment is to promote elimination of the poison, which in early cases is most readily effected by vomiting. Here Dr. Kanagiesser advises against the use of medicinal emetics, and recommends that emesis should be stimulated by tickling the back of the throat, or by giving draughts of lukewarm water in which a little butter has been dissolved. Only when such simple measures have failed does he suggest the administration of apomorphine. He strongly advocates washing out the stomach, more particularly in cases in which a certain amount of the poison has already been absorbed by the stomach wall. The second class of cases are those due to medicinal remedies of vegetable origin. Here are included atropine, cocaine, quinine, digitalin, morphine, santonin, and pilocarpin. Remarks are made upon the symptoms of overdosage and of chronic poisoning by those drugs. The third group is of particular interest to dermatologists, and consists of those plants the etiological importance of which in connexion with certain mysterious skin diseases has been recognized only within comparatively recent years. Such plants are the notorious Chinese primrose, with five other species of *Primula*, the poison sumach (*Rhus toxicodendron*), chrysanthemum, clematis, ivy, hyacinth, hop, and many others. The idiosyncrasy displayed towards these various plants is one of the most interesting features, and in this connexion the author states that about 1 in every 200 persons is susceptible to the influence of the primroses, and that in most cases the sufferers are women over 40 years old. Other sections of the book are devoted to poisoning by mushrooms, by cereals, and by such alkaloids as caffeine and nicotine.

A somewhat strange and not particularly intelligible mixture of thoughts on the universal energy of organisms is contained in a small book by CARL LÜDERITZ.[6] It is an exposition of certain ideas and propositions on biological conditions which, according to the author, have not found their way into, or been recognized by, general scientific literature. We are very much inclined to doubt the accuracy of the author's statement, and a perusal of the book has not led to the discovery of anything strikingly novel either in theory or treatment. The general laws of energy are shown to hold good in the case of living beings from the lowest to the highest. An organism is, in short, a transformer of energy. In the case of those more highly developed organisms there is a division of labour, and at the same time a co-operation in the elaboration of energy. Further, there is a constant interchange of energy between organisms and their environment, and this is of varying degrees of complexity in proportion to the grade of organization. From these several considerations the conclusion at which the author arrives, unavoidably he says, is that the spaces occupied by the human brain are distinguished from all other spaces known to us by the fact that they absorb a maximum amount of energy in proportion to their size. This is a physiological correlation of the complicated structure of the brain, compared with which the starry heaven is, the author thinks, a simple thing; and this establishes man as the centre of the universe.

[5] *Vergiftungen durch Pflanzen und Pflanzenstoffe. Ein Grundriss der vegetalen Toxikologie für praktische Aerzte, Apotheker, und Botaniker.* By Friederich Kanagiesser, Dr. med, and phil. Jena: Gustav Fischer. 1910. (Post 8vo, pp 49. M. 1.)

[6] *Gedanken zur allgemeinen Energetik der Organismen.* Von Carl Lüderitz. Berlin: August Hirschwald. 1910. (Demy 8vo, pp. 59. M.1.20.)

TRANSPLANTATION OF THE OVARY.

WITHIN the last few years some excellent work on the ovary and its functions has been carried on in laboratories in the British Empire. Some reports on this work deserve to be studied by all physiologists and gynaecologists. We refer to Dr. Louise McIlroy's essay on the Development of the Germ Cells in the Mammalian Ovary, mentioned in a recent issue, and to several monographs on the ovarian functions by Blair Bell, Hick, Bond, Marshall, and Scott Carmichael. The last named, in writing on the Possibilities of Ovarian Grafting in the Human Subject, showed that in the rabbit, though the whole ovary might be transplanted with success, it as a rule underwent degeneration. He concluded that it was unlikely that the whole human ovary can be grafted with success, but considered that partial grafting, especially of the cortical portion of the ovary, was more likely to succeed. Dr. J. H. NATTRASS, of Melbourne, has published an instructive report of physiological work on similar lines in a monograph entitled *Autoplastic Ovarian Transplantation and its Clinical Significance.*[7] He reports a series of experiments undertaken in the laboratories of the University of Melbourne. He quite rightly considered what mammal is the most suited for experimentation. In the bitch the anatomical relations of the ovary make transplantation difficult, and in the guinea-pig there are similar impediments to effective oöphorectomy. In the rabbit the anatomy of the Fallopian tubes and ovaries is, on the other hand, very favourable for the purpose in question. That animal does not bear shock and takes chloroform badly, but Dr. Nattrass found that it takes ether well. The subject must be kept warm by artificial means for several days to counteract the effects of shock. Except in one case, in which for special reasons a bitch was chosen, Dr. Nattrass selected rabbits; he practised autoplastic grafting—that is to say, the excised ovary was transplanted on some part of the same animal beyond the genito-urinary tract. He succeeded in grafting ovaries on the kidney, the spleen, peritoneum, periosteum, external intercostal muscles, and subcutaneously on the external oblique muscle. Shortly after transplantation the ovary was found to be firm in consistence and slightly larger, not however from hypertrophy, but from fatty degeneration and swelling of the cells of the stroma. The degeneration was most marked in a subcutaneous and least in a renal or splenic graft. In the older grafts—and this result is worth noting—there was a diminution in the size of the ovary, an increase in the amount of fibrous tissue, a progressive absorption and repair of pathological products, and a continued development of ova and Graafian follicles, "although not nearly to the same extent as in the normal ovary." Union to the tissue on to which the ovary was transplanted occurred rapidly, and well-developed fibrous bands were detected in a fourteenth day's graft. Nutrition was at first carried on by transudation of fluid from the lymph spaces in the adjacent tissues, hence the periphery of the ovary, the egg-bearing part, retained

[7] *Autoplastic Ovarian Transplantation and its Clinical Significance.* By J. H. Nattrass, M.D., B.S., Honorary Obstetrical Surgeon to the Women's Hospital, Melbourne; late Honorary Clinical Assistant, Children's Hospital. From the Physiological Laboratory, University of Melbourne, June, 1910. Melbourne: Austral Publishing Company.

its vitality. Later on blood vessels developed. In order to observe the influence on sexual heat the ovaries of a fox-terrier bitch were transplanted, the right subcutaneously on to the surface of the right external oblique, and the left into the sheath of the left rectus abdominis. The animal came on heat three times during the year, each period being characterized by vulval swelling, sanguineous discharge, and display of instinct. Dr. Nattrass concludes that as the functions of the ovary are continued when transplanted in animals, the same may happen in the human species, and he makes numerous suggestions in respect to hysterectomy, ovariotomy, and sterilization. Conservation of the ovaries in hysterectomy for fibroid is a recognized practice; and when haemostasis cannot be secured in cases in which both ovaries are drawn up on the surface of a big tumour, Dr. Nattrass's advice that they should be amputated with the tumour and then transplanted is probably sound. Dr. Nattrass's valuable essay is illustrated by thirteen fine photomicrographs. He himself must admit that the sexual function in *Lepus* and *Canis*, both subjected by him to experimentation, are not identical with those of the human species. We know of at least one case in which transplantation failed in the human subject. Sauvé and Quénu reported at a meeting of the Société Anatomique de Paris in 1907 the case of a woman who underwent hysterectomy for bilateral disease of the Fallopian tubes. An ovary was grafted, but nine months later Quénu found it necessary to do a second operation for the removal of the graft, which had grown excessively painful, whilst at the same time menopause symptoms, just what it was sought to avoid, set in. But Dr. Nattrass's work shows a distinct advance in the experimental physiology of organs often in these days submitted to operation, diseases of the adjacent uterus being in many of such cases also existent. The author is aiding in the solution of a grave problem.

SPECIAL NURSING.

IN the writing of books for nurses there is even greater difficulty than in writing for the student. How much it is advisable for a nurse to be taught, how much she is in a position to understand and retain, is a most debateable matter. It depends on the mentality and character of the individual nurse rather than on the requirements of nurses as a class. Again, the knowledge acquired by reading stands in a totally different category from that gained by work, observation, and personal instruction at the bedside. The methodical education received by a mediocre medical student prepares his mind for the appreciation of the relative value of a number of facts subsequently placed before him. Information which he derives from books is, therefore, comparatively free from danger, because his mental digestion has gone through a process of gradual training, such as that of the nurse, as a rule, has not received. Some nurses, no doubt, possess very high capabilities for assimilating oral or written instruction, and they will pursue their studies even further than the volume on *Nursing in Diseases of the Eye, Ear, Nose, and Throat*,[8] issued by the Committee of the Manhattan Eye, Ear, and Throat Hospital, takes them, with every advantage to themselves and those for whom they work. Some, on the other hand, will read a good deal of the more theoretical part without very great benefit, but will do very well if they confine themselves to the practical instructions. These may, nevertheless, be quite as useful and valuable nurses as their more lettered sisters, or may even surpass them.

The work is constructed in a very rational way, and the attempt to avoid redundancy without omission of important matter has met with a considerable measure of success. No nurse can study it without advantage, and if she carries out her instructions in accordance with it, the surgeon will rarely, if ever, find himself at a loss. The chapter on the nurse's duties in emergencies is naturally one of the most important and one of the most difficult to construct, but the account of what she may do, as laid down in this chapter, may in general be accepted if the nurse has behind it a certain amount of observant experience. We may notice, incidentally, that the use of hydrogen peroxide is recommended, but we see no statement as to the strength of the solution. The paragraph on shock strikes us as particularly good. In regard to cocaine poisoning we have a difficulty in understanding the applicability to the nurse's work of the sentence on p. 62 that "Opium and chloral are given by mouth, while the inhalation of chloroform or ether will shorten the existence of the symptoms," or of the following on p. 93, where it is stated with regard to convulsions, "Chloroform is the best means of quickly controlling the convulsion. Morphine hypodermically and chloral by rectum should be relied on to ward off continuance of the attacks." We trust that the average nurse will not consider this as an instruction to herself.

It is said in regard to chronic catarrhal deafness that "the office nurse will appreciate the benefit to be derived from treatment commenced early in the course of the disease and the hopelessness of benefiting those of long standing"; also, on p. 233, that "the operation for cleft palate or hare-lip is a difficult one, and is not always attended with success." In view of the tendency in the course of conversation for the nurse to convey such opinions to the patient, we think that these remarks might have been omitted, as they may clash with the views of the surgeon in any given cases. On the other hand, the chapter on the management of troublesome children will be gladly recommended to the notice of nurses by many surgeons.

We should have liked to see greater caution inculcated in regard to the use of douches for the nose; otherwise, the instructions and illustrations with regard to them are most excellent. The book is full of valuable information, though by omitting some very long quotations from an old edition of *Quain's Dictionary of Medicine*, room and to spare might have been found for some special warnings to nurses with regard to the dangers of inoculation and infection in cases of actual or possible sepsis, tuberculosis, or syphilis. The book is so attractive and useful that it is sure to have an extensive sale, and alterations of the kind here mentioned in another edition would, we are certain, increase its value.

[8] *Nursing in Diseases of the Eye, Ear, Nose, and Throat.* By the Committee of the Manhattan Eye, Ear, and Throat Hospital. Philadelphia and London: W. B. Saunders Co. 1910. (Demy 8vo, pp 281. Illustrated. 6s. 6d.)

A LAND OF SUNSHINE.

LORD ROSEBERY the other day somewhat needlessly reminded us that in these islands we live under sunless skies. It is no wonder, therefore, that so many of the "idle rich" should every winter seek for a brighter clime where they can forget for a time the vexations of the supertax and land valuation. To them it is a holiday, but to invalids the search for sunshine may be a matter of life or death. In this search Dr. GUBB will be found an excellent guide. He takes as the motto of his booklet,[9]

I speak of Africa and golden joys.

But the words are more appropriate in his mouth than in that of Ancient Pistol, for the part of Africa he describes offers to those fortunate enough to be able to visit it the joys of a golden sunshine which are a more precious cordial than the old *aurum potabile*. It is true enough that, as the poet says, *Coelum non animum mutant qui trans mare currunt;* but to many to whom the leaden skies of an English winter are the near forerunners of the funeral pall, it is much to be able to exchange grey bleakness for a blue heaven and vitalizing sunlight.

Dr. Gubb, who practises at Mustapha Supérieur in the winter, has made a close study of the climate of Algiers, and is thoroughly well acquainted with the country, of which he gives a short but interesting sketch. He gives an account of its flora, which makes one, like the ancient writers to whom he refers, think of the Garden of the Hesperides. To any one doomed to pass the long months of winter amid streets darkened by houses begrimed by smoke and fog, Dr. Gubb's description comes like a breath of the sweet South. The climate of Algiers itself differs in many important respects from that of other parts of Algeria, the superiority, according to Dr. Gubb, being due to the combined factors of seaside and moderate altitude.

[9] *Algiers as a Winter Resort, and its Therapeutical Indications. Together with Notes on Hammam R'Irha, Biskra, and other Places of Interest in Algeria.* By Alfred S. Gubb, M.D., M.R.C.S.Eng., L.R.C.P. Lond., Diplomate in Public Health; Author of *Aids to Gynaecology*; late editor of the *Medical Press and Circular*. London: Baillière, Tindall, and Cox, 8, Henrietta Street, Covent Garden. Price 1s. 6d.; pp. 104.

The winter temperature is relatively high and remarkably equable, the extreme limits during the winter season, as established by ten years' meteorological observations, being 48° and 67° F. The winter begins about the middle of October, and during that and the following months the weather is such as would "do honour to an ideal English summer." From December to March what we should call fine autumn weather is the rule, while April and May are summer months. The heat does not become excessive until July, but most of the Mustapha hotels close in May. Besides the comparative uniformity of temperature, the climate of Algiers has a brightness peculiarly its own. Without being relaxing it is reposeful. It is interesting to learn from Dr. Gubb that the European population of Algiers comprises a large proportion of persons who were in the first instance sent there young on account of incipient pulmonary disease. Having regained their health they have remained living testimonies to the curative action of the climate in cases not too advanced to permit of complete recovery. Among the other conditions for which he has found the climate of Algiers useful are chronic heart disease, the subacute and chronic forms of Bright's disease, arteriosclerosis, rheumatism, and gout. To neurasthenics the sunlight is a most useful stimulus.

Statue of Æsculapius at Timgad.

There is no lack of amusements, though sport has to be sought for a good many miles away. Dr. Gubb with a few touches gives the reader a good idea of Hammam R'Irha, Blida - Les - Glacières, Biskra, the desert city, and of other places of interest within reach of Algiers. The historically minded will find many remains of Roman power at Cerchell, known in antiquity as Caesarea, the capital of Mauritania; at Timgad, where there are extensive ruins; and Lambessa, where at one time was stationed the famous Third Augustan legion. Excavation is still being carried on by convicts from the military prison. Among the ruins is a temple of Æsculapius.

Dr. Gubb's little book is written in a readable style, and is well illustrated. It contains a great deal of information in a small space. It should be useful to physicians in selecting a winter climate for patients, while the practical details as to hotels, itineraries, and so forth, will be a help to those who wish to visit Algiers in search of sunshine and health.

NOTES ON BOOKS.

THE report of Dr. AMAND ROUTH to the fifth International Congress of Obstetrics and Gynaecology at St. Petersburg in September last, to which reference was made in the JOURNAL of January 28th, page 219, has been reprinted from the *Journal of Obstetrics and Gynaecology of the British Empire* in a separate volume, entitled *Caesarean Section in Great Britain and Ireland*.[1] The report is founded upon 1,282 cases of Caesarean section performed by over 100 obstetricians and gynaecologists in Great Britain and Ireland. Brief particulars of all the cases are set out in a table which occupies about four-fifths of the volume.

Volume XLVII of the *Minutes of the General Medical Council*[2] and of its various committees for the year 1910, recently issued, contains nineteen appendices. One of these is a second edition of the report as to the conditions under which medical and dental practitioners registered or legally qualified in their own country may practise abroad. The General Index[3] to the Minutes of the General Medical Council and of its Executive and Dental Committees and of its three Branch Councils, Volumes XL to XLVII (1903-10), has also been received. The system of issuing a periodical index to the Minutes of the Council greatly facilitates the task of consulting the volumes.

[1] *Caesarean Section in Great Britain and Ireland.* By Amand Routh, M.D.Lond., F.R.C.P.Lond. London: Sherratt and Hughes. 1911. (Sup. roy. 8vo, pp. 233. 5s.)

[2] *Minutes of the General Medical Council* and of its Various Committees for the year 1910, with nineteen appendices. Vol. XLVII. London: Spottiswoode and Co., Limited. 1911. (Demy 8vo, pp. 546. 12s.)

[3] *General Index to the Minutes of the General Medical Council*, of its Executive and Dental Committees, and of its three Branch Councils. Volumes XL to XLVII (1903-1910). London: Spottiswoode and Co., Limited. 1911. (Demy 8vo, pp. 131.)

Dr. CEMACH of Vienna has published some tables for diagnosis[4] which were originally drawn up for his own guidance, and have proved useful to him in his practice. Whilst admitting that it is a valuable discipline to draw up tables for oneself, it must be insisted that tables of diagnosis lead to a mechanical pigeonholing of cases, with all its attendant disadvantages of routine therapeutics and clinical stagnation. Sound diagnosis must eventually be based on a knowledge of pathology, and these tables cannot be said to be so based. Scrofula is classed with diseases of metabolism. There is little reference to laboratory methods of diagnosis. The tables contain an enormous mass of readily available information, and may at times be useful to a puzzled practitioner, but their utility must be very limited.

[4] *Differential-diagnostische Tabellen der inneren Krankheiten.* By Dr. Cemach, Vienna. München: J. F. Lehmann. 1910. (Med. 8vo, pp. 144; 1s.)

MEDICAL AND SURGICAL APPLIANCES.

Intravenous Injection of Salvarsan.

HUGH W. BAYLY (Pathologist to the London Lock Hospitals, etc.) writes: In the JOURNAL of February 25th, page 447, Mr. J. E. R. McDonagh describes his modification of Schreiber's syringe apparatus for the intravenous injection of salvarsan. He concludes his description of the apparatus by dogmatically stating six "advantages of injection over transfusion." These six advantages are in my opinion, non-existent. I consider a simple transfusion apparatus, such as I described in the *Lancet* of January 21st, as far superior, in that it is easier to work with and combines the advantages of simplicity and economy. The only fragile part is the container, which can be purchased for half a crown. In this opinion I follow that expressed by Major Gibbard and Captain Harrison of the Military Hospital, Rochester Row, who have had a very much larger experience of the administration of salvarsan by the venous route than any one else in this country. Captain Harrison writes[1]:

> We thought it best at first to use the syringe devised by Dr. Schreiber that Dr. McDonagh has shown you to-night. We found, however, that when injecting into a narrow vein it required the very closest attention to prevent the needle from either coming out of the vein or else perforating it again, because it is so hard to keep the needle still while the syringe is being filled. We now use an ordinary transfusion apparatus.

I have personally given about fifty infusions with the apparatus that I advocate, and have found it most satisfactory in every way. I always allow a couple of ounces of saline solution to flow from the container after I have punctured the vein, and make sure that it is flowing freely and without the production of any local swelling before I pour the saline solution into the container. The flow can be stopped instantly by applying the clip to the rubber tubing, and I think that any one who has used my needle holder will agree that "the operator has more control" than with Schreiber's apparatus. The resident medical officer at the Female Lock Hospital now uses an infusion apparatus with my needle holder in preference to a syringe. I particularly insist on the importance of *slow* infusion (about ten minutes), so that the salvarsan solution may be largely diluted with blood and the risk of phlebitis reduced to a minimum.

MEDICINAL AND DIETETIC ARTICLES.

Suchard's Chocolate and Soluble Cocoa.

CHOCOLATE in some form is a popular sweetmeat, and probably there is none of higher nutritive value, for, when properly manufactured, it contains large proportions of fat and nitrogenous constituents as well as sugar, and as beverages chocolate and cocoa are consumed in very large quantities. Among preparations of this kind the chocolate and cocoa of the firm of Ph. Suchard (Neufchatel; and 33, King William Street, London, E.C.) deserve a high place. Samples which have been submitted to us recently gave the following results on analysis:

	Chocolate.	"Soluble" Cocoa.
Nitrogenous constituents calculated as protein ...	5.6 per cent.	20.7 per cent.
Fat	28.2 ,,	31.8 ,,
Mineral constituents ...	1.4 ,,	7.1 ,,

The flavour of both is delicate and agreeable; the cocoa is in very fine powder and makes a most satisfactory beverage.

[1] *West London Medical Journal*, January, 1911, p. 46.

SHEFFIELD ROYAL INFIRMARY.

The New Buildings.

THE Sheffield Royal Infirmary was erected in 1797, and has been enlarged from time to time to meet the necessities of an ever increasing population. Its centenary was marked by the additions of an ophthalmic block, a new home for nurses, and new operation theatres. Three years ago the need for further accommodation became urgent, and the weekly board took in hand the present scheme of extension. The older parts of the infirmary, although structurally quite sound, were recognized to be unsuitable for the requirements of a modern hospital, and unduly expensive to work. For these reasons it was decided to utilize some of the older wards in extending the quarters for nurses, servants, and the resident medical staff, and to erect a new building which would provide accommodation for about 200 patients.

Thanks to the foresight of its founders, the infirmary grounds, which comprise about ten acres, afford plenty of room for the erection of the present addition without encroaching on the space occupied by the older buildings.

The new building is a plain stone-faced pavilion, 360 ft. in length, connected with the rest of the infirmary by a large well-lighted underground corridor. It comprises an extensive basement for stores, calorifiers, and disinfecting apparatus; three main floors containing wards and their accessories; and above this a flat roof broken in the centre by the new operation rooms.

The main floors are identical in design. In the centre are the staircase and lift, which are continued up to the roof. Next, on either side, are ward kitchens, stores of various kinds, and then the wards. These are arranged in six units—two on each floor. Each unit comprises one large and two small wards. The latter are for isolation cases, and have one bed each. The large wards are 121 ft. by 26 ft., and contain 28 beds each. At the extreme ends of the building are situate the sanitary towers, one in each angle, while between them are balconies leading out of the wards by wide folding doors.

A cloak room and lavatory for the nurses and a clinical room are provided on each floor.

The operation rooms comprise a large theatre 34 ft. by 19 ft., with anaesthetic, sterilizing, and instrument rooms adjoining, and a smaller theatre with similar annexe for septic cases. The walls and ceilings are lined with opaline tiles, and the floors are of vitreous mosaic. The ventilation is by the plenum system, the air being washed and heated by an ingenious process introduced by Mr. Talbot of Sheffield.

The flat roof is reached from the top of the main staircase, and will be used by patients suffering from tuberculous lesions, in the treatment of which outdoor life counts for so much.

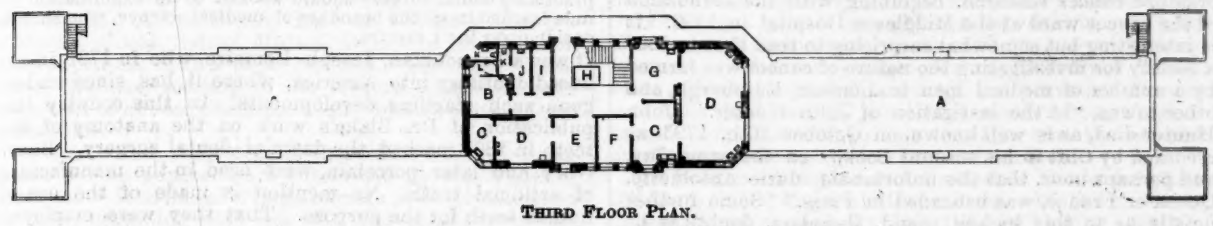
The wards are unusually large. They provide 1,460 cubic feet of air space per bed. Inquiry at other hospitals elicited an almost unanimous verdict in favour of large wards, on the grounds of economy in construction and working, including nursing. The modern view of one window to each bed has been departed from by providing one window to every two beds. The interior effect is more pleasing to the eye, and much more comfortable for patients, who, when out of bed, are able to avoid direct draughts. The windows are of the "magic balance" pattern, which, by a mechanism alike simple and ingenious, provides excellent control over the ventilation, and admits of cleaning being done entirely from within.

The floors are constructed of concrete without supporting girders, and are covered with oak blocks set herring-bone fashion in the wards, and by Venetian mosaic in the sanitary annexes, kitchens, and store-rooms.

The building is practically "fireproof," but additional safety is secured by an outside escape staircase at either end.

The heating of the entire infirmary has been remodelled, a single set of boilers taking the place of a number of isolated ones.

THE ROYAL INFIRMARY, SHEFFIELD. NEW PAVILION BLOCK.



THIRD FLOOR PLAN.

FIRST FLOOR PLAN.

A, Flat roof: B, surgeon's room; C, sterilizing room; D, operating theatre; E, recovery room; F, instrument room; G, anaesthetizing room; H, lift; I, microscopic room; J, cloaks; K, W.C.; L, bath; M, balcony; N, ward, 121 ft. by 26 ft.; O, stove; P, separation ward; Q, kitchen; R, brooms; S, pantry; T, clinical room; U, linen; V, clothes; W, store; X, nurses' lavatory.

The new pavilion, which will be used exclusively for surgical cases, provides accommodation for 194 patients—150 adults and 44 children.

The architects—Messrs. Gibbs, Flocton, and Teather—deserve great credit for the evolution and carrying out of the scheme, which it is confidently predicted will bear favourable comparison with any of the recently erected hospitals, while in point of cost—£150 per bed—it is enormously cheaper.

MOTOR CARS FOR MEDICAL MEN.

CHOICE OF A BODY.

G. W. writes: Having had great difficulty in obtaining for a small (10-h.p.) chassis a body suitable for both professional and family use, my experience may be useful to others. The ordinary "double-purpose body" does not, I think, supply the want; it gives a rather small two-seated closed coupé with a small or large bucket seat at back, which is cold, uncomfortable, and ugly. One is told that anything more commodious and presentable means a larger and more expensive chassis. I have been driving for some months, in rather a hilly district, a very roomy, completely closed two-seater, with plenty of room for professional impedimenta, and with exit and entrance possible on driver's side. In a few minutes it is convertible into an open full-sized, but high and handsome, touring car, with no obstruction left standing in front. It was made by Alford and Alden, London, S.E. The 10 h.p. carries it very well indeed.

MEDICINE IN THE "ENCYCLOPAEDIA BRITANNICA."[1]

THIRD NOTICE.

THE article on Cancer in the new edition is very decidedly more informing than the one on the same subject in the previous edition of the *Encyclopaedia*, on the meagreness of which we felt it our duty to comment. In discussing the alleged increase of cancer, it is pointed out that the question how far available statistics represent a real increase cannot be satisfactorily solved, because it is impossible to ascertain how much of the apparent increase is due to more accurate diagnosis and improved registration.

Some of it is certainly due to those causes, so that the recorded figures cannot be taken to represent the facts as they stand. At the same time it is certain that some increase has taken place in consequence of the increased average length of life; a larger proportion of persons now reach the ages at which cancer is most frequent. Increase due to this fact, though it is a real increase, does not indicate that the cause of cancer is more rife or more potent; it only means that the condition of the population in regard to age is more favourable to its activity. On the whole it seems probable that, when allowance has been made for this factor and for errors due to improved registration, a real increase due to other causes has taken place, though it is not so great as the recorded statistics would indicate.

An account is given of the various endeavours to organize cancer research, beginning with the foundation of the cancer ward at the Middlesex Hospital in 1792. It is interesting but somewhat surprising to read that in 1804 a society for investigating the nature of cancer was formed by a number of medical men in London, Edinburgh, and other towns, "at the instigation of John Hunter." John Hunter died, as is well known, on October 16th, 1793, as recorded by Clift in his account book, "on the same day, and perhaps hour, that the unfortunate Marie Antoinette, Queen of France, was beheaded in Paris." Some further details as to this society would, therefore, doubtless be welcomed by the Society for Psychical Research. Whatever may have been its origin, the collective investigation which the society undertook soon came to nothing owing to the imperfect means of communication then existing. A clear account of recent theories as to the origin of cancer is given. With regard to cures, mention is made of trypsin and of its failure at the Middlesex and the Cancer hospitals. It might have been well if, in connexion with this subject, mention had been made of Dr. William Seaman Bainbridge's elaborate and conclusive report on *The Enzyme Treatment for Cancer* (New York, 1909). In speaking of the *x* rays, the writer says that "until more is known both of cancer and of *x* rays their use must be considered not only experimental but risky." Nothing is said about radium. To Christian Science about a column is given. Nothing is said of Mrs. Eddy's indebtedness for what she herself called her knowledge of the "Science of Mind-healing" to Phineas P. Quimby. As regards healing, we are told that "very remarkable successes have been claimed for the treatment," but no attempt is made to sift the evidence or to indicate the kind of case in which success has been obtained by means of Christian Science as by other forms of faith healing. We think also that it would have been advisable to say something about the cruelty of subjecting children who cannot form a judgement for themselves to such a system of healing, and to warn people of the danger to which parents who accept the gospel according to Mrs. Eddy may expose school children and the general public by the dissemination of infectious disease. The article seems to us inadequate alike from the theosophic and the healing points of view. There is an interesting little note on Cramp-rings, anciently worn as a cure for cramp and "falling-sickness" or epilepsy. The belief in the curative powers of circlets of metal has lingered on to the present day, and rheumatism rings may be bought in our enlightened metropolis for a few shillings. In a most interesting article on the Deaf and Dumb the subject is thoroughly dealt with from every point of view. Much attention is given to a description of the signs by which deaf-mutes can communicate with each other and with the outer world. It may not be generally known that it was a Spanish Benedictine monk, Fray Pedro Ponce de Leon, in the sixteenth century, who was the pioneer in the teaching of the deaf "to speak, read, write, reckon, pray, serve at the altar, know Christian Doctrine, and confess with a loud voice." The article on Dentistry contains some interesting historical statements. For instance, the transplantation of teeth, usually attributed to John Hunter, is referred to by Paré, 1509–1590, and there is said to be evidence to show that it was practised even earlier. The subject of artificial teeth in antiquity is very cursorily dealt with. Yet the Etruscans could fix artificial teeth, and sometimes used gold settings for the purpose; and as early as the fifth century before Christ a law in the Twelve Tables shows that the practice was common among the ancient Romans (*Cui auro dentes juncti escunt, aut im cum illo sepeliet uretve, se fraude esto*). Under the Empire they were in ordinary use, as we learn from Martial's epigram:

> Thais habet nigros, niveos Lecania dentes.
> Quae ratio est? Emptos haec habet, illa suos.

Modern dentistry begins with Fauchard, who in 1728 published a work entitled *Le chirurgien dentiste ou traité des dents*. He says in his preface that:

The most celebrated surgeons having abandoned this branch of surgery, or having but little cultivated it, their negligence gave rise to a class of persons who, without theoretic knowledge or experience, and without being qualified, practised it at hazard, having neither principles nor system. It was only since the year 1700 that the intelligent in Paris opened their eyes to these abuses, when it was provided that those who intended practising dental surgery should submit to an examination by men learned in all the branches of medical science, who should decide upon their merits.

It was a Frenchman, Joseph Lemaire, who in 1781 introduced dentistry into America, where it has since undergone such startling developments. In this country the publication of Dr. Blake's work on the anatomy of the teeth in 1801 marked the dawn of dental surgery. Bone, ivory, and later porcelain, were used in the manufacture of artificial teeth. No mention is made of the use of human teeth for the purpose. That they were employed on a large scale is shown by the fact that a large trade in these commodities was driven by the "resurrection" men whose occupation continued to be plied till the passage of the Anatomy Act in 1832. Bransby Cooper, in the life of his uncle, tells of several "resurrection men" who made expeditions to the Continent during the Napoleonic wars for the purpose of getting teeth on the battlefields. One of these men returned with £700 worth of teeth, which were disposed of to dentists in various parts of London. The article on Dietary gives details as to the allowance of food supplied in workhouses and prisons, and to soldiers and sailors, not only of our own but of foreign services. In the article on Dietetics a concise review of the whole subject is given. It is inspired not only by the results of recent scientific research, but by common sense and practical experience. The text of it may be said to be, "What is one man's meat is another's poison"—a proverb which expresses a simple fact too often forgotten by the advocates of the fads so common at the present day. In the article on Diphtheria a hint that might be useful to some of those who decry antitoxin is conveyed in the statement that the Registrar-General's returns record the number of deaths, not the number of cases. It is shown that the prevalence of diphtheria has notably decreased in recent years. Tables are given showing the case-mortality in hospitals of the Metropolitan Asylums Board during five years before and five years after the introduction of antitoxin, and it is pointed out that the broad result is a reduction in mortality by more than one-half. The writer says it is a fair inference that the treatment saves the lives of about 1,000 children every year in London alone. But, it is added, the evidence is not from statistics alone. The beneficial effect of the treatment is equally attested by clinical observation. Dr. Roux's original account has been confirmed by a cloud of witnesses year after year. He wrote:

One may say that the appearance of most of the patients is totally different from what it used to be. The pale and leaden faces are scarcely seen in the wards; the expression of the children is brighter and more lively.

We can confidently refer the practitioner who may be perplexed by the misleading statistics published by the fanatics who oppose progress to this temperate, judicial, and well-documented article. Dreams form the subject of a very interesting article, and the description

[1] *The Encyclopaedia Britannica*. A Dictionary of Arts, Sciences, and General Information. Eleventh edition. Vols. I–XIV. Cambridge: University Press. 1910.

of the Ductless Glands is a model of clearness and succinctness. The articles on Dysentery and Dyspepsia are sound, but call for no special remark. The anatomy of the ear is well described and illustrated by Dr. Parsons, and a somewhat meagre account of the diseases of that organ is given by the late Mr. Cresswell Baber. The diseases of the eye are much more satisfactorily dealt with by Mr. G. A. Berry. The article on Electro-therapeutics scarcely gives an adequate presentment of the subject. We do not know why, unless it is owing to the fear of Mrs. Grundy, the article on Gynaecology is printed entirely, with the exception of a somewhat jejune historical introduction, in small type. The inference would appear to be that the literature of the subject is considered as of greater importance than the diseases that may afflict women. The writer apparently accepts as historical the story of Agnodice, the Athenian midwife, whose eagerness to learn is said to have led her to disguise herself as a man; it is regarded by Withington, and we think with good reason, as a myth. In a work generally so well edited it is a little surprising to find so clumsily redundant a phrase as "The credit of being the first to perform the operation of ovariotomy is now credited to McDowell."

MEDICAL INSPECTION OF SCHOOL CHILDREN.

DISCUSSION AT THE MEDICO-LEGAL SOCIETY.

AT a meeting of this society held on February 21st, Dr. L. Haden Guest, School Medical Officer to the London County Council, read a paper entitled, "The Administration of the Law relating to the Medical Inspection and Treatment of School Children." Sir WILLIAM COLLINS was in the chair.

Dr. GUEST said that medical inspection was now being carried out on general lines prescribed by the Board of Education. It included a large number of observations on the body, beginning with the skin and ending with the nervous system. Was there any right to examine a child if the parent objected? Apparently there was not; but, although the question had sometimes arisen, it was generally found that parents were willing to allow the inspection to take place, because they realized that it was to the advantage of the child. If the inspection was carried out on the lines prescribed by the Board, it covered the mental and physical condition of the child. Defects of the ears, eyes, and teeth were generally found to be the most frequent. Striking abnormalities were infrequent, because as a rule children with grave mental or physical defects were not sent to the schools. Inspection having taken place, the further question arose, What was to be done with children found to be defective? Under ideal conditions of course the parents would take the child to their own medical man; but unfortunately the large majority of parents who sent their children to the elementary schools had no private medical attendant. One plan was to send all children requiring treatment to hospital; but there was often no hospital near the school. Further, as medical inspection was a means of discovering pathological abnormalities, it followed that a large number of cases were brought to light. If these were all sent to hospital there would soon be overcrowding. The London County Council had made arrangements with certain hospitals, but as it had been unable to make an arrangement with all the hospitals, it often happened that a child had to be sent to a hospital two miles away, instead of to one next door to the school. He recorded a case where a woman came with tears in her eyes to say that she had been compelled to take her child to a hospital far away, leaving two small children alone at home. Again, it was a serious matter for a woman to have to waste possibly a whole day at a hospital when she might have been earning money at home. Hospital treatment, moreover, was not altogether satisfactory. The consultation was too hurried; a parent came away, having heard hasty instructions which were imperfectly understood. For his part, he "plumped for school clinics." Medical inspection could not, in his view, long continue without their establishment. Two classes of children had to be considered—a medical group and a poverty group. The medical group would consist of children whose parents were ready and willing to look after them. The children who would attend the school clinic would be the poor children whose parents could not afford to give them medical treatment. In his view, there would be no difficulty about separating the two classes. A "poverty group" child, it often happened, had more than one disease. If one was cured the others remained. Nothing less than a long period of treatment would be of permanent value. They could not be cured in a home where the father and mother were addicted to alcohol or were too slack to look after the children. If it was made easy the most shiftless parent would be willing to let the child be treated. Acting in conjunction with the School Care Committee those in control of the school clinic could obtain better conditions for the child. The position of the inspector and those responsible for inspection—whatever it was before—was very much stronger after the inspection had been held and a disease found; for then in case of neglect the parent could be prosecuted. The school clinic would in his view at some future time become the centre round which education would revolve. This movement was to join forces with the movement indicated by the Minority Report of the Poor Law Commission. They were there concerned with great reconstruction forces in the nation; forces which require that order and organization should prevail. The nation was determined that the child should be equipped, both mentally and physically, as well as possible.

Dr. ASHTON asked Dr. Guest whether any legal actions had been brought in respect of compulsory examination. Speaking as a private practitioner, he would be very glad if the school authorities would send their cases to him. In common with many other doctors, he felt not a little hurt at cases being taken out of their hands. It was inevitable that medical treatment must follow medical examination, but the British taxpayer and the general practitioner were entitled to be considered.

Mr. ROWLAND BURROWS said that while it was true that the State should know what was wrong with the children, it was essential that the obligation of looking after the children should be put upon the right shoulders—namely, the shoulders of the parent. This was another move in the direction of putting the patients of the private general practitioner on the rates. He could say that without prejudice, as he was only a lawyer himself.

Mr. WILLIAMS said that sympathy was always aroused with all forms of suffering, particularly with suffering in the child; but there was such a thing as individual responsibility. As one who lived in a poor neighbourhood he saw that the comforts of life were enjoyed by the thriftless and idle. To work was optional, and the idle lived on the industrious.

Mr. VALENTINE BALL pointed out that the proposals made were one step further in the direction of relieving the parent of all responsibility for the child. What was to be the cost of it all? It was rumoured that, owing to the rules made by the Board of Education, the County Council already stood committed to a large increase in expenditure upon the schools. What was to be the cost of school clinics? As a mere lawyer, he would like to raise his voice on behalf of the general practitioner, whose life was already devoted to the poor. What was to be his position if school clinics were universally established?

The CHAIRMAN pointed out that this was an accidental piece of legislation. It was first introduced by an amendment of Mr. Tennant in 1906. It claimed to be ancillary to education, in which respect it was like the feeding of school children. As he understood the legal position, it was now obligatory to provide for inspection; but medical treatment was optional, and could only be carried out under a scheme sanctioned by the Board of Education. He fully anticipated that the question of parents' consent would emerge sooner or later. By an Act passed in 1909 the education authority could recover the cost of medical treatment from the parent. As to whether treatment was to be a part of inspection, very different views were expressed on that point when the Act was under discussion in the House of Commons. It was interesting to compare the reports of the Board of Education for 1908 and 1909. In 1908 the policy was to exhaust all available means before establishing school clinics; but in 1909 there seemed to be a tendency to accept clinics as inevitable. As the Act originated in the House of Commons the question of treatment was put on one side. There was a tendency to make the period of 5 to 14 a period of State

handling rather than instruction; and this was leading up to a system which was to provide for the health rather the instruction of the child. There was no task which would trouble the statesmen of this century more than the decision between liberty on the one hand and State benevolence on the other.

Dr. GUEST, in reply, said that his answer to those who complained that the responsibility of parents would be diminished was that it was necessary to sacrifice something to build up the nation; but he did not agree that to look after the health of the child was to diminish the interest of the parent. On the contrary it stimulated the parent. He was unable to say what the cost of school clinics would be; but he thought it would not exceed £700 or £1,000 a year in any district; and when estimating the cost it was necessary to set off the expense now incurred to achieve the same object partially.

BRITISH MEDICAL BENEVOLENT FUND.

AT the February meeting of the committee 27 cases were considered and grants amounting to £223 made to 19 of the applicants. Appended is an abstract of the cases relieved:

1. Daughter, aged 40, of late F.R.C.S. No income; delicate health and dependent on mother, whose income is only 10s. a week. Relieved 11 times, £98. Voted £12.
2. M.B., C.M.Edin., aged 61. No income and incapacitated by hemiplegia; four children, all dependent. Voted £12.
3. Widow, aged 52, of L.F.P.S.Glasg. No income; takes in boarders, and receives a little help from a daughter earning 14s. a week; health very delicate. Relieved seven times, £70. Voted £12.
4. Widow, aged 37, of L.R.C.P., L.R.C.S.Edin. Unprovided for at husband's death about ten years ago and has supported herself by nursing; two children. Now asks for a little help towards the school fees of the elder daughter, aged 15. Voted £10.
5. Widow, aged 62, of M.D.Lond. At husband's death twelve years ago took a boarding house, but has been obliged to exhaust all her capital in order to meet expenses. Voted £12.
6. Daughters, aged 70 and 63, of late M.R.C.S., L.S.A. Were comfortably provided for at father's death twenty years ago, but made very unfortunate investments and are now practically penniless. Voted £18.
7. Widow, aged 65, of M.R.C.S. Husband's means were exhausted by a long illness, ending in death a few months ago, and applicant has chronic glaucoma. No children. Voted £12.
8. Daughter, aged 62, of late M.R.C.S., L.S.A. Since father's death in 1903 has held situations as cook-housekeeper, etc., but is now unable to obtain employment. Voted £12.
9. M.R.C.S., aged 64. Has completely broken down in health and is practically penniless. Voted £12.
10. Daughter, aged 49, of late M.R.C.S. Quite unprovided for at father's death and has maintained herself for nearly twenty years, but is now in a delicate state of health, and can only undertake occasional and light work. Voted £12.
11. M.R.C.S., L.R.C.P., aged 31. Is in pecuniary distress through no fault of his own, and asks for a little help towards unavoidable expenses before going abroad. Voted £5.
12. Widow, aged 49, of M.B.Durham. At husband's death twenty years ago started a nursing home and supported herself and a widowed mother, but is now broken down in health and requires a rest. Two children, both delicate, and barely self-supporting. Relieved three times, £29. Voted £12.
13. Widow, aged 66, of L.R.C.P.Edin. Has given music lessons and taken lodgers, but is now in bad health and dependent on a daughter earning £1 a week. Relieved six times, £60. Voted £12.
14. Widow, aged 60, of M.D Glasg. No income and dependent on a son who can ill afford to help. Relieved once, £12. Voted £12.
15. Daughter, aged 56, of late M.R.C.S. Endeavours to support herself by letting lodgings, but finds it impossible to meet unavoidable expenses. Relieved four times, £55. Voted £10.
16. Widow, aged 69, of L.F.P.S.Glasg. Husband's means were exhausted by a long illness which preceded his death, and applicant endeavours to maintain herself by taking boarders; health indifferent. Relieved three times, £22. Voted £12.
17. Daughter, aged 49, of late M.R.C.S. No income; health too delicate to admit of employment, and dependent on a brother-in-law whose earnings are extremely small. Relieved twice, £24. Voted £12.
18. Widow, aged 65, of L.R.C.P., L.R.C.S.Edin. Is quite penniless, and dependent on a married son earning £1 a week. Relieved twelve times, £129. Voted £12.
19. Widow, aged 45, of L.R.C.P., L.R.C.S.Edin. No income and children unable to help; is incapacitated by a chronic complaint, and practically dependent on help given by this Fund and another society. Relieved fifteen times, £172. Voted £12.

Contributions should be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

TYPHOID FEVER AND FRIED FISH.

SIR SHIRLEY MURPHY has presented to the Public Health Committee of the London County Council a report confirming the suspicion which has been entertained for some ten years or more that plaice, at any rate as supplied by fried-fish shops, is a cause of typhoid fever in London. The investigation has been in the hands of Dr. Hamer, Medical Officer for Special Purposes, and the result is an illustration of the advantage of continuity in such inquiries, as it is by cumulative evidence that the case becomes established.

The report now submitted deals mainly with an outbreak in the East End of London last autumn. The inquiries were directed to some 300 cases, notified from the thirty-third to the forty-second week of 1910. Having regard to the behaviour of typhoid fever in the affected localities during the period in question as compared with preceding and succeeding periods of 1910, and as compared with the behaviour of the disease in adjoining areas, it became clear that at least two-thirds of the total 300 cases must have been due to some special cause, the remaining 100 cases representing the number reasonably attributable to the causes ordinarily operative. During the period mentioned the special incidence of typhoid fever showed a marked tendency to develop in clusters or groups, of which there were thirty-one in London proper and two just beyond the border. Of the 200 patients in these groups, all but five or six belonged to the poorest classes in the population, and among the exceptions four were nurses and one was the wife of a fish vendor. Among the whole 300 sufferers, however, there were some twenty persons who did not belong to the poorest class. Water, milk, and the consumption of mussels could be excluded, and it was noted that the outbreaks were explosive, the dates of onset in Bethnal Green and in most of the other localities affected suggesting that infection was contracted on August 10th, 11th, or 12th. Where more than one case occurred in the same household the dates of onset were, as a rule, within a few days of one another, and in the great majority the infection would seem to have been introduced into the infected household at one and the same time. Among the 79 cases in Bethnal Green 68 gave a history of having eaten fried fish within a month of the onset, and of 50 cases in an area of special prevalence all but one had eaten fried fish in the area, and this exception afterwards proved to have been a case notified in error. In all "multiple house invasions" the sufferers had partaken of the suspected fish at home, while in the large majority of cases in which only one member of a family suffered that member had been in the habit of obtaining a fish dinner or fish supper away from home. Within the special area in Bethnal Green there were twenty-seven fried fish shops. Giving due weight to the extent of the business done at each shop and of the shop's position in the area, a calculation of chance was made, and it was found that three shops had been more frequented by the persons attacked than the remaining twenty-four; thus one shop was named by the sufferer more than six times as often, and two other shops six times as often as would have been anticipated were the distribution a mere matter of chance. In fact it appeared that forty-nine of the sufferers had obtained fish from one or other of these three shops; the fifth was the case in which an error in diagnosis was made. All these shops, it was found, obtained their supply from Billingsgate; in all instances the fish falling under suspicion was plaice, including flounders and dabs, and all were what is known as "late-steamer fish" Now, it appears that only one tenth of the fish sold at Billingsgate would be classified as late-steamer fish. It appears not to be the custom of the "friers" to go to Billingsgate until the higher-priced fish has been disposed of, and the "late fish" falls largely into the hands of costers and small friers.

The inspection of fish in London is carried on under peculiar conditions. The fish trade has its own inspectors, appointed by the Fishmongers' Company, and, although the City Corporation has taken action in particular instances, more particularly as regards shellfish, there is no systematic control by a sanitary authority such as is now regarded as necessary in the case of other sources of

food. In fact the question as to whether the "late fish" shall be sold or not is left very largely to the discretion of the coster or frier. Plaice it is stated is practically the only fish used by vendors of fried fish which is not gutted as a matter of course at sea; this is due to the fact that as the food of the plaice consists largely of shellfish, it is possible to retain the gut without injuring the fish, while the character of the intestinal contents of fish consuming "softer food" necessitates removal of the gut forthwith. In recent years the practice of gutting plaice also would seem to be coming into favour, but the London steamer companies do not as a rule attempt to gut the small plaice.

How the fish become infected is not clear, but it appears that plaice are commonly caught in an immature state in vast numbers in certain shallow parts of the sea near the coast, and it is known that small flat fish enter tidal waters. The suggestion arises that they become infected in the estuaries of large rivers on one or other side of the North Sea. From the point of view of the possible depletion of the fish in that sea, it has been suggested that fishing on the so-called nursery grounds should be prohibited, and it is stated that retail traders would welcome the rigorous imposition of a size limit at Billingsgate; a 20 centimetres limit (about 7¾ inches) is imposed, but, low as it is, even this is at certain times of the year not always observed.

It appears that the Corporation of the City of London has been in correspondence with the Fishmongers' Company in consequence of the report made in 1906 to the London County Council by its Public Health Committee on the subject of the infection of food by riparian sanitary authorities, and Sir Shirley Murphy suggests that a copy of the reports by himself and Dr. Hamer, to which reference is here made, should be forwarded to the Corporation for consideration in connexion with the report of their own Sanitary Committee made in June, 1909.

ORGANIZATION OF MEDICAL ATTENDANCE ON THE PROVIDENT OR INSURANCE PRINCIPLE.

We called attention last week to some of the arrangements made by Divisions of the British Medical Association in Great Britain for the consideration of the report on the Organization of Medical Attendance on the Provident or Insurance Principle, prepared by the Special Poor Law Committee and Contract Practice Committee of the British Medical Association sitting in conference, and published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of March 4th. Meetings were held on March 9th at Altrincham, and on March 16th at Gloucester and meetings have been arranged in the City of London at Winchester House, Broad Street, E.C., on Friday, March 17th, at 4 p.m., and by the North Suffolk Division at Lowestoft on Saturday, March 18th, at 4 p.m. The following is a list of meetings at which arrangements have been made for the Medical Secretary to attend:

Thursday, March 23rd	...	Rochester (Divisions in North and East Kent), afternoon
Friday, March 24th	...	Newcastle-on-Tyne (Division in North of England Branch), 4.30 p.m.
Saturday, March 25th	...	Carlisle (English portion of Border Counties Branch), 4.30 p.m.
Monday, March 27th	...	Dumfries or Castle Douglas (Scottish portion of Border Counties Branch), afternoon
		Glasgow (West of Scotland Divisions), evening
Tuesday, March 28th	...	Northampton (South Midland Branch), Board Room, Northampton General Hospital, 2.30 p.m.
Wednesday, March 29th	...	Leicester (Midland Branch), 4 p.m.
Thursday, March 30th	...	Bradford (Yorkshire Branch)
Friday, March 31st	...	Liverpool (Western portion of Lancashire and Cheshire Branch)

The invitation to attend these meetings is extended, not only to members of the Division in which they take place, and of neighbouring Divisions, but to all members of the profession, whether members of the British Medical Association or not, who may find the place selected convenient.

Similar meetings are, we understand, being arranged by other Divisions, and it is asked that Divisions which desire the attendance of the Medical Secretary should communicate with him as early as possible and fix their meetings with regard to the above table.

SCIENCE NOTES.

AT a recent meeting of the Zoological Society, Dr. Woodland read an interesting paper on the structure of the gas glands and retia mirabilia in Teleostean fishes. As is well known, the swim bladder or air sac of fishes contains a mixture of gases, a certain proportion being oxygen. The mixture is not air, and Dr. Woodland therefore considers the term "air sac" inappropriate. Again, the bladder does not enable the fish to swim, except in so far as it imparts buoyancy, and so the term "swim bladder" is also hardly exact. The chief function of the organ is to enable the fish to change its level in the water. For this purpose a mechanism is necessary to produce a rapid evolution of gas; this is the gas gland, and the gas evolved is oxygen. The gas gland assumes various forms in different fishes, but in all cases it consists essentially of an excretory epithelium supplied by a rich vascular system of peculiar construction. To this system of blood vessels the term "*rete mirabile*" is applied. The artery supplying the gland breaks up into a large number of minute branches, which spread out in a fan-like array. In some cases these arterioles run direct to the excreting epithelium. In others they unite together into a single vessel which again splits up to furnish the ultimate branches. The veins conveying the blood from the gland follow the course of the arteries closely, and in the *rete* the capillary arteries and veins lie side by side. It had previously been shown that the liberation of the oxygen was due to a process of haemolysis, and it was suspected that this was caused by the production of a haemolytic substance from the excretory cells. The action was believed to take place in the near vicinity of the excretory cells. Dr. Woodland, however, shows that the facts do not entirely support this belief. The liberation of the oxygen takes some time, and if the process only started in the vicinity of the excretory epithelium the blood would be on its way back before the gas was set free. Dr. Woodland suggests as the true explanation that the haemolysin is taken up by the venous blood and diffuses from the veins into the arteries in the *rete mirabile*. In this way haemolysis would be initiated in the *rete*, and by the time the blood reached the gland the oxygen would be set free.

A very close study has recently been made by Guyer of the reducing divisions in human sperm cells and of the behaviour of the accessory chromosomes in the process. This process, whereby the number of chromosomes in the sexual cells is reduced to half that in the somatic cells, is not quite so simple as is usually represented. The presence of the accessory chromosomes introduces a considerable amount of asymmetry. In all the cases in which Guyer was able to make a definite count the number of chromosomes in the spermatogonia was 22. In the primary sperm cell there are 12 chromosomes, of which 10 are bivalent and 2 accessory. During division the accessory chromosomes pass undivided to one pole of the spindle, while the other 10 split, half going to each pole. In this way one daughter cell receives 12 chromosomes, the other only 10. When these cells again divide the chromosomes divide equally, and the sperms derived from these are thus of two kinds—one with 12, the other with only 10 chromosomes. The presence of accessory chromosomes has been determined in man and other vertebrates as well as in insects and spiders, and Guyer is of opinion that they have something to do with the determination of sex.

THE International Hygiene Exhibition to be opened at Dresden in May includes a section devoted to the popularization of a knowledge of the dangers of unqualified practice.

LITERARY NOTES.

In the March number of *Knowledge* there is a photograph taken by Mr. Frederick Bonney at Momba, River Darling, New South Wales, in April, 1881, of an old native Australian woman who is shown in "half-mourning" (*num-muyn-ka*). Mourning consists in covering the head with plaster, and in half-mourning a broad band of the latter is put over the head from front to back. The special interest of the photograph is that the signs of sorrow were put on, not for the loss of a human relative, but for a favourite dog. The old woman would doubtless find "spiritual affinities" among the members of some of our antivivisection societies. It would not surprise us to learn that some of them have put on trappings of woe in memory of the Brown Dog, of whom it may now be said, *Etiam periere ruinae.*

In the February number of *Janus* Dr. Charles Singer exhumes the work of an old physician, Benjamin Marten, whom he calls a neglected predecessor of Louis Pasteur. In 1720, he says, there was published in London a small volume entitled, *A New Theory of Consumptions, More Especially of a Phthisis or Consumption of the Lungs*, wherein, according to the subtitle, "Enquiry is made concerning the Prime, Essential, and hitherto accounted Inexplicable Cause of that Disease, so very Endemick to this Nation." The book is divided into four chapters:

Chapter I. "Of Consumptions, more especially a Phthisis, or Consumption of the Lungs; all its various Symptoms throughout its several Degrees."
Chapter II. "An Enquiry concerning the Prime, Essential, and hitherto accounted Inexplicable Cause of Consumptions, etc."
Chapter III. "Of the . . . various Methods of Cure recommended for Consumptions . . ."
Chapter IV. "Of the Possibility of Curing a Phthisis . . . With Directions about exercise, Diet and manner of Living in General, proper for Consumptive Persons."

Dr. Singer says it is in Chapter II that the main interest of the book is concentrated. The first part of this chapter consists of various hypotheses concerning the nature and causes of phthisis, quoted from such authors as Hippocrates and Galen among the ancients, and Helmont, Paracelsus, Sylvius, Willis, Morton, and Gideon Harvey (senior) among other modern writers. Dismissing all these hypotheses as inadequate, Marten proceeds to set forth his own theory, which is neither more nor less than the germ theory of disease as we know it to-day, clearly conceived and applied, not only to consumption, but to other infectious diseases, among which he includes plague, venereal disease, small-pox, measles, the common rheum, and leprosy. The following is his own statement of his views:

> The *Original* and *Essential Cause* then, which some content themselves to call a vicious Disposition of the Juices, other a salt Acrimony, others a strange Ferment, others a malignant Humour (all which seem to me dark and unintelligible) may possibly be some certain Species of *Animalcula* or wonderfully minute living Creatures, that, by their peculiar Shape, or disagreeable Parts, are inimicable to our Nature; but however capable of subsisting in our Juices and Vessels, and which being drove to the Lungs by the Circulation of the Blood, or else generated there from their proper *Ova* or Eggs, with which the Juices may abound, or which possibly being carried about by the Air, may be immediately convey'd to the Lungs by that we draw in, and being there deposited, as in a proper *Nidus* or Nest, and being produced into Life, coming to Perfection, or increasing in Bigness, may by their spontaneous Motion, and injurious Parts, stimulating, and perhaps wounding or gnawing the tender Vessels of the Lungs, cause all the Disorders that have been mentioned, viz. a more than ordinary Afflux of Humours, upon the Part, Obstruction, Inflammation, Exulceration, and all other the *Phenomena* and deplorable Symptoms of this Disease.

Marten says further:

> And as by good Glasses we can discover an infinite Number of Animals, that are not apparent to our Sight without them, so we may reasonably conclude there are Myriads of others infinitely smaller and wholly imperceptible to our Eyes, tho' assisted with the best Glasses that can be made . . .

He maintains the possibility of intrauterine infection, and holds that specific diseases are due to specific organisms:

> Thus one species of *Animalcula*, by means of their wonderfull Smallness and injurious Parts, may instantly offend the Brain and Nerves, and cause Apoplexies and sudden Death, whilst other Species may produce the Plague, Pestilential or Malignant Fevers, Small Pox, etc., and others again Chronick Diseases, such as Hypochondriack Melancholly, Vapours, Scurvy, Gout, Rheumatism, Evil, Leprosy, Consumption, etc. . . . For how can we better account for the regular types, the Small Pox, Malignant, and all other Continual and Intermitting Fevers, as well as many other Distempers, keep, and the peculiar Attributes and *Crises etc.* they have, than by concluding they are severally caused by innumerable *Animalcula*, or exceeding minute Animals that variously offend us according as their Species are different, and as their peculiar Shape and Parts are more or less injurious to our Fluids and Solids . . . By what has been said, I think it appears highly probable that Minute Animals, stimulating, wounding or gnawing the parts they are lodged in, are the cause of these Diseases; and in a Word, there is possibly no ulcer or ulcerated Matter, but what is stock'd with *Animalcula*, and as these are of different Species, and more or less capable of injuring the Parts in which they are bred or lodged, so those Ulcerations may be more or less stubborn or Inveterate.

Leprosy he thinks was, perhaps, propagated by means of imperceptible volatile animals. But Marten says he would not be understood to advance that all distempers are caused by minute organisms. He urges only the possibility and likelihood of their being the essential cause of the plague, pestilential and other malign fevers, small-pox, and some other diseases, as well "Chronick as Acute, and Particularly of . . . a *Phthisis*." The book itself was published in 1720, but the preface shows that it was completed in the previous year, for it terminates with the legend, "From my House in Theobald's Row near Red-Lyon Square in Holbourn, September 1, 1719." A second edition appeared in 1722. In it he expressed satisfaction that "many learned Gentlemen" approved of his theory. Nevertheless, he hints several times that his views have not been accepted by the profession at large. There is no mention of Marten or his theory in the works of Blackmore (London, 1721), Richard Mead (London, 1720), R. Brookes (London, 1721), or Phillip Rose (London, 1721), or in a number of contemporary works on phthisis.

The *Encyclopédie Médicale* is a monthly bibliographical summary of the contents of the medical publications of France and other countries. It is the work of a committee of doctors. Being arranged alphabetically it is convenient for reference. As far as we have tested it, the abstracts are brief but sufficient for practical purposes. Foreign literature, however, occupies a very subordinate place. The *Encyclopédie Médicale* is published in Paris (32 rue Madame); the subscription for foreigners is £1 yearly.

The W. B. Saunders Company have sent us a copy of their new illustrated catalogue, revised to January, 1911, which contains the announcement of a number of important new books and new editions. It extends to eighty pages. Since the issue of the last list, about a year ago, no fewer than twenty-one new works and thirteen new editions have been added to their catalogue; detailed particulars of each book are given, and are supplemented in many cases by reduced specimen illustrations. The catalogue is produced in a style which may truly be called artistic, many of the illustrations being quite admirably executed.

We have received the first number (January) of the *North of England Clinical Journal*, described on the title page as the organ of the Newcastle-upon-Tyne Clinical Society. The society has been in existence for more than a quarter of a century, and to-day is more flourishing than it has ever been before. The journal contains an address on the menopause by Sir John Halliday Croom; a paper on obstetrics in relationship to some of the allied sciences, by Dr. Napier Burnett; and one on the pathology of lymphadenoma, by Dr. Stuart McDonald. Dr. Harold Kerr contributes a review of the year's progress in public health; Dr. Herbert J. Slade writes on salvarsan; and Dr. T. M. Allison records a case of actinomycosis. The journal also contains a number of reports of cases and descriptions of specimens, and concludes with a review of the annual report for 1909 of the Chief Medical Officer of the Board of Education. The motto of the journal—

> . . . To urge us on
> With unremitted labour to pursue
> Those sacred stores that wait the ripening soul,
> In Truth's exhaustless bosom—

is particularly appropriate, as it is from a famous Novocastrian, Mark Akenside, now better remembered as a poet than as a physician. We congratulate the editor, Dr. George Foggin, and his committee on having made an excellent start, and we wish our new contemporary a prosperous career.

British Medical Journal.

SATURDAY, MARCH 18TH, 1911.

ETIOLOGY AND TREATMENT OF ACUTE POLIOMYELITIS.

GREAT as has been the advance of epidemiology during the last fifty years, owing partly to increased accuracy in the recording and analysis of international vital statistics, and partly to the growth of experimental medicine, including the coming into existence of the science of bacteriology, the factors which cause an infectious disease commonly limited in extent and incidence to become epidemic or pandemic still remain for the most part obscure. The observation has many applications even at the present day, when plague seems once again to be spreading to the dimensions of a pandemic; but it applies also to the strange fact that for some years acute infectious poliomyelitis has existed as an epidemic in the United States and in Canada, and appears to be establishing itself in most of the countries of Europe. Great Britain has not escaped, although the number of outbreaks is small, as is also the actual number of cases when compared with the shocking figures from the United States. Dr. Parker of Bristol gives elsewhere in this issue an account of an epidemic occurrence in that city during 1909. He is able to record particulars of thirty-seven cases, which probably comprise all that could be recognized clinically.

One good result of the unfortunate opportunity which has been afforded to bacteriologists by the recent prevalence of the disease has been the establishment of the hypothesis that it is an acute infectious disease, due, as it would appear, to an organism so minute that it cannot be recognized microscopically. It has been shown, however, that the infective agent can be transmitted from men to monkeys, and from monkey to monkey in series. In this issue Dr. Vipond gives some particulars of the prevalence of the disease in Montreal, and records the observation that in at least six out of the thirteen cases of poliomyelitis the Widal reaction was present, and a reaction which he calls "suggestive" in four other cases; completely negative results were yielded by three cases only; in two of these the attack had occurred two or three months earlier. What the exact significance of this may be we cannot pretend to say. Taken together with the observations of Dixon, Fox, and Rucker, noted in the EPITOME (163), it may raise a suspicion that the pathological lesions of acute poliomyelitis may be produced by more than one agent, for it is impossible to suppose that bacteriologists as skilled as Levaditi or Flexner could have overlooked the presence of an organism so conspicuous as that recorded from the Pennsylvania Laboratory. In this issue, also, Dr. Garrow, of Maryport, where there was a small epidemic of acute poliomyelitis last autumn, calls attention to Dr. Head's observation on the analogy between acute specific herpes zoster and acute poliomyelitis, and states that an unusual number of cases of the former disease occurred at Maryport during the epidemic of the latter.

Dr. Simon Flexner, of the Rockefeller Institute for Medical Research in New York, whose earlier observations were noted in these columns about a year ago,[1] has now published, in association with Dr. Paul F. Clark, a ninth note[2] which is interesting, although, like a serial story, it leaves off at the most interesting point. Flexner had previously established experimentally the fact that an attack of experimental poliomyelitis protects against reinfection with the virus of the disease, and that the blood of monkeys and of persons who have recovered from the acute effects of epidemic poliomyelitis contains neutralizing principles for the virus on which their immunity must be considered to depend. The immunity principles by which it must be assumed that the acute process is brought to an end have been shown to reside in the blood serum, and are, therefore, probably of the nature of antibodies. What have come to be designated abortive cases occur, and it is possible to determine experimentally in such a case whether the patient has or has not suffered from poliomyelitis, since normal human serum has no power to neutralize the virus, while the serum from recovered cases of poliomyelitis has. The diagnosis of many cases has been established in this manner. During the first one or two months the immunity principles may exist both in the blood and in the cerebro-spinal fluid; but, even at this early period, these principles, though present in the blood, have not always been detected in the cerebrospinal fluid. At later periods, and after one or more years, it is highly exceptional to secure neutralization of the virus by means of the fluid. The conclusion, therefore, is that during the earlier stages of epidemic poliomyelitis, when the blood vessels of the leptomeninges and the central nervous system are abnormally pervious, the immunity antibodies escape into the membranes and nervous tissue; but as the vessels return to normal the antibodies are no longer secreted and thus tend to disappear. The immunity principles persist in the blood for several years, and it is probable, therefore, that they are elaborated in the situations—namely, in the lymphatic and blood-forming organs—in which antibodies in general are prepared.

With regard to treatment, it appears that urotropin (hexamethylen-tetramin) holds out some hope of benefit. The fact established by Cushing and Crowe that this drug is in part eliminated into the subdural space led Dr. Roger S. Morris of Baltimore to suggest its clinical use. Flexner and Clark have tested its efficiency in experimental poliomyelitis in monkeys, and were able to demonstrate its presence in the cerebro-spinal fluid soon after the administration of a large dose by the mouth. They have ascertained that when the virus of poliomyelitis is injected intracerebrally in monkeys in which the hexamethylen-tetramin is already present in the fluid, and the drug is administered by the mouth daily thereafter, in a proportion of animals so treated, but not in all, first, the incubation period of the disease is prolonged (from six to eight days to twenty-four days), and next, the onset of paralysis is entirely prevented. When the drug is administered by the mouth and the immune monkey serum by injection into the subdural space, the paralysis can also be prevented, and possibly with greater certainty.

The fact that the abortive and mild cases appear to play an important part in disseminating the infection, and the further fact that there is now some hope of

[1] BRITISH MEDICAL JOURNAL, 1910, vol. i. p. 221.
[2] *Journal of the American Medical Association*, February 18th, 1911.

controlling the disease by a drug, renders early and certain diagnosis very important. In monkeys, the cerebro-spinal fluid at the height of the lesions in the meninges exhibits a very slight turbidity or opalescence, due to a large increase in white corpuscles, best seen on gently agitating the fluid, and contains an excess of protein matter. The white corpuscles consist partly of polymorphonuclear and partly of mononuclear (lymphatic) cells. The excess of protein is readily detected by applying Noguchi's butyric acid test. Flexner and Clark have been able, in a case of Dr. L. F. Frissell's, to determine that the facts just stated hold good also for human beings the victims of epidemic poliomyelitis. An early and certain diagnosis of the disease in a suspicious instance has been made by examining the cerebro-spinal fluid in the manner indicated. The paralysis was observed to follow the height of the cellular and protein changes in the fluid, and the cessation of the extension of the paralysis to coincide with a beginning reduction in these changes, as is the case in the monkey. In monkeys the virus of epidemic poliomyelitis passes from the meninges into the nasal mucosa, and infection can readily be produced by bringing the virus into contact with the scarified mucous membrane. This fact led to the suggestion that the naso-pharynx acts in human beings as the portal of entry of the virus into the central nervous system. Observation on monkeys showed that in some instances they remained, after recovery from the effects of inoculation, passive carriers of the virus; but, so far, the nasal and pharyngeal mucosa of a person who has succumbed to epidemic poliomyelitis has not been examined for the virus. This Flexner and Clark propose to do.

PERSECUTION OF A MEDICAL OFFICER.

READERS of Ibsen will remember the fate that overtakes Dr. Stockmann, the medical officer of the baths, when he tries to prevent the wholesale spread of disease by polluted water. At a public meeting of citizens he is unanimously denounced as an enemy of the people. He is hooted by the crowd, who yell insults after him as he goes home; they break his windows, tear his clothes, boycott his family, and drive him from the town and his native country. Under this severe tuition he learns two lessons—one, that "a man should never put on his best trousers when he goes out to battle for freedom and truth"; the other that "the strongest man in the world is he who stands most alone." Not a few medical officers of health in this country have been made to feel the wrath of Bumble when they have dared to denounce the owners of slum property, and to stand up for the right of the poor to decent dwellings and wholesome conditions of life. But everywhere the doctor whose means of livelihood depend on a public appointment is at the mercy of his official chiefs, or may be a victim of some misdirected movement of the "great heart" of the people.

ONE of the most tragic cases that has come to our knowledge occurred recently in the market town of Riedau in Upper Austria. There Dr. Richard Franz had spent himself in work as district medical officer for some four years. In the summer of last year he notified to the local authorities the occurrence of a case of typhoid fever in the school-house at Riedau. At the time military manœuvres were being carried on in the district, and in consequence a large body of troops was quartered in the town. Dr. Franz, therefore, gave information to the military authorities and thus prevented further billeting. The manœuvres were very properly discontinued. His action was the more justified since Riedau is frequently visited by typhoid fever. The diagnosis was fully confirmed by bacteriological examination. The townspeople, however, taking offence at this obvious measure of precaution, instituted a systematic boycott of Dr. Franz; there seems to be some reason to believe that in this action they had secret supporters among officials, administrative and military. Shopkeepers refused to sell him food; he was overwhelmed with abusive letters, threatened with violence, and became involved in a lawsuit. He was dismissed from his post by the local sanitary authority. After a time the Government came to the rescue; the doctor's dismissal was cancelled and the sanitary authority was dissolved. Nevertheless the boycott continued. As the result of the persecution of which he was the victim Dr. Franz died on January 8th of heart failure brought on by worry. If ever a man died a martyr to duty, it was the district medical officer of Riedau. He was only 36, and has left behind him a widow, a little boy, and an aged mother, who were wholly dependent on him. The indignation among members of the profession is very great, and they promptly combined to ensure some kind of provision for those he has left behind. The Austrian medical journals called on the Government to support the family of the dead man, and after a meeting of protest at Linz, the Medical Association of Upper Austria passed a resolution that it would help the family according to the means at its disposal.

The matter was brought before the Austrian Chamber of Deputies, and has been taken up by the daily press and by the public. The Committee of the Austrian Medical Chamber has unanimously passed a resolution expressing its deep regret that such an event could have occurred in a civilized country. The committee further declares that the existing defenceless state of doctors is dangerous not only to the medical profession itself, but also to the public, and a hope is expressed that it will not be long before doctors are endowed with distinct legal rights and powers. At a meeting of the Society of German-speaking Medical Practitioners recently held at Prague, Dr. Kramer, the President, urged the assembly to protest against the treatment that had been meted out to Dr. Franz. The doctors, he said, must insist that the present sanitary authorities shall take the case into consideration, and hold up those responsible for the tragedy to public condemnation. A large sum was subscribed at the meeting. The Vienna Medical Orchestra gave a large concert for the benefit of the family on February 5th. According to the most recent information, the sanitary district has been ordered by the Government to pay the full pension that would have been due to Dr. Franz. This, together with the contributions voted by various medical associations, will, it is said, make a sufficient provision for the unfortunate doctor's family.

The case shows the power of organized action by the profession in defence of its members. It is interesting to note that when the post was vacant one doctor, ignorant of the state of affairs, applied for it, but on learning the state of affairs withdrew his application. This was the result of a "warning notice" issued by the local medical association.

It is said that this is by no means a solitary instance of boycotting of a medical officer for doing his plain duty. In other parts of Austria and in Vienna itself similar cases have occurred. At a meeting of the executive committee of the Austrian

Medical Chamber, at which the principal subject of discussion was the tragedy of Riedau, the president stated that the drama, *An Enemy of the People*, had already been enacted in Austria. The part of Stockmann was played by Dr. Meissner, a doctor in a Bohemian health resort. Meissner—who was the father of the well-known German-Bohemian author, Alfred Meissner—on one occasion had to report a case of cholera to the authorities. The result was that the people, looking upon him as an enemy to their town, persecuted him to such an extent that, sick in mind and body, he was forced to leave the scene of his labours. The fate of Meissner is believed by many to have supplied Ibsen with the idea of his play.

The lesson of these tragedies is obvious. Medical practitioners must combine and stand shoulder to shoulder, resolutely opposing the tyrannous misuse of authority. Nothing could more strikingly show the necessity of such an organization as the British Medical Association for the protection of the interest of practitioners threatened by the oppressor's wrong and the insolence of office. It is only by such combination that the profession can expect to secure fair treatment and respect of its rights.

THE PREVENTION OF DESTITUTION.

DURING the week preceding Whitsuntide—May 30th and 31st and June 1st and 2nd—a conference will be held at Caxton Hall, Westminster, at which will be discussed practical methods of preventing destitution. Poor Law questions, in so far as they refer to the relief of destitution, will not be considered at the conference, and it has been decided by the promoters that the discussions shall not culminate in definite resolutions. The questions to be dealt with at such a gathering are many, so that it is proposed to divide the meeting into sections. The Public Health section will have for its president Sir Clifford Allbutt; the Education section, Professor M. E. Sadler; the section on the Mentally Defective, Sir William Chance; on Unemployment, Sir Alfred Mond, Bart., M.P.; and the Legal and Financial section, the Hon. Mr. Justice Phillimore. Among the questions proposed to be discussed by the Public Health section are the administrative control of tuberculosis in relation to the prevention of destitution; the relation of sickness and invalidity insurance to the public health; the work of the public health authority in relation to birth and infancy; the need for a unified public health service; and the relation of such a service to voluntary agencies. The Public Health section will discuss with the Educational section the medical and dental treatment of school children, and with the Unemployment section the question of physical disabilities for employment. Although the Lord Mayor of London is the President of the conference, and among those actively concerned in its promotion are many public officials, voluntary agencies will be largely represented, and the best means of bringing official and voluntary bodies into co-operation will come under discussion.

THE "MEDICAL REGISTER."

THE *Medical Register*[1] for 1911 has just been issued. The number of names contained is 40,483, which is exactly 500 in excess of the average for the last five years, and 5,626 in excess of the average for the last twenty-four years. The number of names added by registration in 1910 was 1,062, as compared with an average of 1,152 for the last five years and 1,296 for the last twenty-four years. The number of names removed as ceasing to practise and under Sections XIV, XXVIII, and XXIX of the Medical Act, was 13, and on evidence of death 578, making a total of 591. This is nearly 1,100 fewer than in 1909, the diminution being due to the fact that only one person was removed under Section XIV of the Medical Act, which empowers the Registrar to remove the name of a person who does not respond to inquiries. The number of names removed in 1909 under this section was 960; as only 194 names were restored to the *Register* during 1910 it would appear that a very large proportion of the names removed in 1909 were those of persons who were deceased or had retired from practice. The number of names on the Colonial list is 294, and on the foreign list 36. All the foreign names are those of persons holding degrees of Italian universities, with the exception of two who hold the M.B. degree of the Imperial University of Japan. The volume contains prints of the Medical Acts, the Dentists Act, Midwives Act, and most other Acts touching questions of registration and practice, with the exception of the Apothecaries Act of 1815. It might be worth while for the sake of completeness to insert the text of this Act in future editions of the *Register*.

[1] London: Spottiswoode and Co. To be btained through all book sellers. (10s. 6d.)

"STANDARD BREAD."

WHILE the advocacy of the so-called standard bread continues to occupy a good deal of space in the *Daily Mail*, many other journals have referred to the matter in terms of anything but approval or support. We pointed recently to the probability that exaggerated claims would lead to reaction and renewed indifference; there are not wanting signs that the public is beginning to tire of the crusade, and such a statement as that made in a prominent weekly journal, that "the 'standard bread' agitation is really the silliest nonsense that has possessed the British public for years past," shows that our anticipation of a reaction was fully justified. Naturally, the technical journals dealing with the milling and baking trades have had a good deal to say on the subject, without finding much in favour of the agitation except the fact that it has enabled millers to sell at the price of flour a part of the product which could formerly only be sold as "offal." The council of the National Association of British and Irish Millers recently appointed a committee to report on the subject, and although the report of this committee, which has now been published, makes no pretence to be other than an *ex parte* pronouncement, it contains some interesting and useful information. Analyses are given of four kinds of flour obtained from the same blend of wheats. These were respectively "high grade flour," "town households"—which is the kind supplied for making ordinary white bread—"whole-wheat flour," and "80 per cent. or standard flour." The results show that both protein and phosphate are lowest in the "high grade" and highest in the "whole-wheat," whereas in the "town households" and "standard," which for the present purpose it is most important to compare, the figures are almost identical, the small differences being in favour of the former. The actual percentages were: "Town households," protein 12.36, phosphate 0.327; "standard," protein 12.17, phosphate 0.321. We have already pointed out, however, that the really important matter is how much of the valuable constituents can be assimilated and absorbed in the body, and this is not always proportionate to the amount present in the food. A series of feeding tests carried out by Professor Snyder in Minneapolis for the United States Department of Agriculture are important in this connexion. Young

healthy men were fed on bread prepared from three flours of the kinds known there as "Graham," "entire wheat," and "patent." The first of these is made by grinding the whole wheat, and the last-named is ordinary white flour of best quality, while the so-called "entire wheat" is intermediate, and therefore corresponds approximately to "standard" flour. The proportions assimilated were ascertained by analyses of the food taken and of the total excreta over a period of time, in the usual way. The results obtained were: "Patent" flour, protein 88.6 per cent., carbohydrate 97.7 per cent. assimilated; "entire wheat," protein 82 per cent., carbohydrate 93.5 per cent. assimilated; "Graham," protein 74.9 per cent., carbohydrate 89.2 per cent. assimilated. These results are in accordance with those which have been obtained in other investigations, and may reassure those who prefer to continue the use of well-made white bread prepared from good wheat.

RESCUE WORK IN MINES.

DR. LEONARD HILL, in a paper read recently before the Royal Sanitary Institute, demonstrated a self-contained diving dress for penetrating flooded mines where the divers with pipe and life line were not able to go. In connexion with this, he considered the question of oxygen poisoning and how far it was safe to breathe high partial pressures of oxygen, also the effect of breathing oxygen on the metabolism and power to work. Next, he considered the atmosphere of mines, the deoxidation of the atmosphere produced by the coal, the output of methane, and the effect of breathing air containing small partial pressures of oxygen and air containing excess of carbonic acid, "dead air," and "choke damp." He then dealt with the temperature of the mine, and considered the very great hygienic importance of the coolness and movement of the air, and detailed experiments he had recently conducted, contrasting the relative effect of an atmosphere which was hot, motionless, and moist, and an atmosphere which was cool and moving, but chemically impure, so far as regards the partial pressure of oxygen and carbonic acid. In discussing explosions he spoke of the importance of coal dust as a cause of great colliery disasters, and the methods of lessening the danger due to this cause, and then dealt with "after damp" and the poisonous effect of carbon monoxide; after this he demonstrated the Fleurs or "Proto" breathing apparatus, which he had endeavoured to perfect on physiological lines. The apparatus was shown in use, and the method of cleaning and recharging it explained. He described the work that could be done with the dress, its use in the last great colliery explosion, its suitability for use in hot atmospheres for putting out fires in mines, and the precautions which must be taken when the wet bulb temperature was high. He also demonstrated the Salvator apparatus for rescuing entombed miners and the apparatus for restoring cases of "after damp" poisoning. Lastly, he described the type of rescue stations already set up and the regulations for rescue work recently issued by the Mines Committee appointed by the Government.

INSURANCE FOR SMALL SUMS.

A CIRCULAR sent to medical men last autumn by the Pearl Insurance Company was the subject of two editorial notes and some letters in our correspondence columns at the time. The suggestion then made by the company was that medical men should undertake to examine candidates for insurance at the following rates: If the sum assured was £25, then a fee of 3s. 6d.; if over £25, but not exceeding £50, then 5s.; if over £50, but not exceeding £100, then 7s. 6d. The recipients of the circular were invited to believe that the number of applicants for insurance for small sums would be so great as to make it worth while to undertake their examination, while by way of reducing the apparent amount of work which would have to be done in connexion with each case, the form of report was greatly abbreviated. The two more important criticisms to which the suggestion seemed open were that the amount of work required was not really reduced by lessening the number of questions to be answered, and that if the examiner were underpaid for an examination, the greater the number of candidates the greater the number of times that such examiner would do a guinea's worth of work for a 3s. 6d. fee. In view of these criticisms and of the fashion in which the suggestion was generally received by medical men, the company has now put forward a fresh suggestion. The proposal now is to pay an examination fee of 2s. 6d. for assurances under £50; 10s. 6d. for assurances over £50 but under £300; over £300 but under £1,000, one guinea; for £1,000 and upwards, two guineas. The form of report for candidates for assurance under £50 does not ask any specific questions, but requires the medical examiner to fill in a statement that he has seen and carefully examined the candidate, that his age is so-and-so, that his family history is so-and-so, and that he is of normal height and weight and healthy appearance, has not suffered from accident or disease tending to shorten life, and that all his vital organs are sound and their functions properly performed. In conclusion, the examiner is asked to state in what class he would place the life of the proposer. The form for proposers for assurances of over £50 are of an ordinary character. We criticize this fresh circular with some regret, but feel bound to point out the objections which may be properly lodged against it. No conscientious medical man could fill in the form described without having made an examination of the candidate of just as searching a character as if he were asked to answer specific questions regarding the condition of each organ. Hence the amount of work entailed by reporting on a candidate for an assurance of less than £50, in return for a fee of half a crown, would be just as much as that done for the higher fees. There is some reason to believe that the company does not expect as careful an examination of candidates for assurances under £50 as of those for higher sums, and in their case is prepared to be guided by views based on mere cursory inspection. But if this be so, then the wording of the report should be entirely altered. In the reverse case, only two conclusions can be drawn from the circular: Either the company is endeavouring to induce medical men to do for half a crown work which is worth a great deal more, or it does not realize that, whatever the sum secured by the policy, a sound opinion as to the class in which a life should be placed is not possible without an extended examination of the candidate. Such opinions are essential to any well-devised insurance enterprise, and the cost of obtaining them should be recognized as one which cannot be reduced beyond a certain limit. However fully the medical profession may sympathize with the company in its desire to extend the benefit of insurance to the working classes, there is no reason why it should not ask and insist on reasonable fees for its co-operation.

THE FOTHERGILLIAN MEDAL.

THE 138th anniversary dinner of the Medical Society of London was held on March 8th at the Hotel Métropole, London, with Mr. C. J. Symonds, the

President, in the chair. To the right of the Chairman were seated the President of the Royal College of Physicians, the President of the Royal Society of Medicine, the Director-General of the Army Medical Service, Professor Howard Marsh, the President of the Hunterian Society, and the President of the West London Medico-Chirurgical Society; to the left of the Chairman were seated the President of the Royal College of Surgeons, the Regius Professor of Physic, Cambridge; the Mayor of Marylebone, the Director-General of the Royal Navy Medical Service, the Master of the Society of Apothecaries, the President of the Harveian Society, the President of the Ophthalmological Society, and the President of the Society of Tropical Medicine. The event of the evening was the presentation to Dr. F. W. Mott, F.R.S., of the Fothergillian Medal of the society for his research work in the pathology of the nervous system, more especially in regard to syphilitic disease. Dr. Mott, in acknowledging the honour, referred to the assistance the medical profession had received from the London County Council. This Council helped forward the scientific work of medicine in every possible manner, and it was due to its public spirit and energy that preparations were nearly completed for procuring a site for a new hospital for mental disease, towards which Dr. Maudsley had given £30,000. Sir Thomas Barlow, in proposing the toast of "The Medical Society of London," gave historical details of its founder. The response to this toast was from Mr. Symonds, the President, who was able to give a glowing account of the success and prosperity of the society. Speeches were also made by Dr. A. F. Voelcker, Dr. F. J. Goodhart, Professor Howard Marsh, and the Mayor of Marylebone.

THE EPIDEMIC OF MEASLES.

A PRIVATE conference, to discuss the measures to be taken to control the epidemic of measles, was held under the presidency of Dr. Newsholme, Medical Officer to the Local Government Board, on March 13th. It was attended by Dr. Theodore Thomson, Assistant Medical Officer of the Board; Dr. Crowley, representing the Medical Department of the Board of Education; Sir Shirley Murphy, Dr. Kerr, and twenty-two out of twenty-nine metropolitan medical officers of health. Mr. John Burns, President of the Local Government Board, took part in the conference, and in summarizing the main points which the discussion had elicited, he referred to the possibilities of notification of the disease, the possible need for further hospital accommodation, the further use of educational means for preventing the spread of infection, the degree of utility of disinfection in measles, the question of excluding children under 5 years of age from school attendance during epidemic periods or at other times, and the need for regulating private schools, including Sunday schools. During the past four weeks there have been 546 deaths from measles in London, and at the end of last week there were 748 cases under treatment in the hospitals of the Metropolitan Asylums Board and the London Fever Hospital. The disease, as has already been noted, is prevailing in epidemic form in other parts of the country also. In Birmingham since January 14th the number of cases notified has been 2,841 and the number of deaths 130; the number of fresh cases reported last week by the school authorities was 429, being 40 less than the total of the previous week; the number of deaths was 29, an increase of 10. There has been a recrudescence of the disease in the Royal Naval College, Dartmouth, where 25 new cases occurred on March 11th, bringing the number of cases under treatment up to 35.

CELLAR BAKEHOUSES.

VERY unsatisfactory conditions of labour in a Southwark underground bakehouse were revealed in the course of evidence given at an inquest recently held before Dr. F. J. Waldo with regard to the death of a foreman baker from apoplexy in Guy's Hospital. The bakehouse was completely underground, beneath a shop and living rooms, there was no outside area, ventilation being on the level with the street; there was one oven in the bakehouse and three gas jets, two of which were constantly burning. It appears that the man worked from 6 p.m. one day until 1 p.m. the next, and at 8.30 on the night before he was taken ill he and another workman lay down to rest on the top of the dough trough with the dough rising underneath them. Dr. Waldo reminded the jury that when he was medical officer of health to the vestry of St. George's, Southwark, he did his best to close bakehouses which were completely underground unless they were properly constructed, ventilated, and lighted. He considered that baking might very properly be scheduled as a "dangerous trade," and that bakehouses as well as kitchens should be placed above ground. The men employed in the baking trade are themselves agitating for improvements in their surroundings, and the instance to which we draw attention is a justification of their action, for it is most disquieting to find that under existing regulations a man should be able to spend nineteen hours at a stretch in a cellar bakery, taking his food there and actually sleeping over the fermenting dough. In the interests of bread consumers no less than of bread makers, definite action on the part of the proper authorities is necessary to prevent the possibility of such a practice.

CANCER RESEARCH IN AMERICA.

A BILL has been introduced into the New York State Legislature providing for an appropriation of £13,000 for the establishment of a cancer research hospital in Buffalo. The site is to be given by the State. The management of the institution, which will contain twenty-five beds, is to be vested in a board of trustees consisting of seven members, one of whom will be the State Commissioner of Health. In the list of trustees we note the name of Dr. Roswell W. Park. It is announced that Dr. Gaylord has presented a special report, in which he states that after ten years of research he is prepared to supply a serum which he believes to be curative of cancer. Hitherto nearly all the experiments under his supervision have been made on rats, mice, and rabbits. Dr. Gaylord claims to have entirely cured one patient of cancer by means of the serum, and it is now proposed to make the treatment general for all who volunteer to submit to it under the supervision of the laboratory doctors. The number of deaths in New York State from cancer is between 6,000 and 7,000 a year, and Dr. Gaylord in his report expresses the belief that this number will be largely reduced if the State gives the necessary financial support for the new institution. While every effort to discover a cure is to be encouraged, we think it right to point out in the public interest that one case, even assuming the cure to be complete and permanent, is a very slender foundation for the belief that a really curative serum has been found. Dr. Gaylord may, of course, have much more solid ground for his belief than appears from the report we have quoted, and we are the more inclined to think that this is the case, as we find it impossible to suppose that a man of his reputation would make public a statement that might excite hopes of cure among sufferers from cancer unless he felt himself fully warranted in so doing.

COUNTRY HOSPITALS FOR CHILDREN.

In the Journal for March 4th, p. 505, an illustrated description of the Royal Liverpool Country Hospital for Children was published, and the conclusions which its history justifies were accentuated in a separate note at page 516. Since then there has come into our hands the annual report of the New York State Hospital for the Care of Crippled and Deformed Children. It is of special interest, since this institution, though much smaller and as regards its present arrangements more primitive, is in all essentials precisely of the same kind—that is to say, neither a home nor a sanatorium, nor an ordinary hospital, but a place in which children are actively treated by surgical and other measures for as long a time as is esteemed necessary to restore them to complete health as far as circumstances permit. Its work during the ten years that have elapsed since its opening in the year 1900 is summarized by its surgeon-superintendent, Mr. Newton Shaffer. The average length of treatment seems to be nearly two years; hence of the 231 patients so far admitted, only 184 have yet been discharged. Of these, 62 left the institution entirely cured, and 108 improved, many of them materially and permanently. There have only been three deaths, all being due to the chronic tuberculosis which led to the admission of the children. No child has died from any acute disorder. This result is partly ascribed to the fact that fresh air treatment is the basis of the work of the institution, whatever the immediate cause of the deformity. In about 50 per cent. of all cases this cause is tuberculosis, and such children are now kept in open-air shacks or shelters throughout the year and whatever the state of the weather. All those, says the writer, who see these little ones in their happy outdoor environment are struck by the appearance of health which they present. Later on he adds that while the occupants of the wards have their slight ailments, the occupants of the shacks escape, almost without exception, the ordinary ailments incident to childhood. As the net upshot, a new hospital is being planned in which outdoor treatment and life will be secured for all the patients, whether these are admitted for tuberculosis of joints or for the operative or mechanical treatment of conditions such as club-foot, bow-legs, and knock-knees. In other words, New York intends to do what Liverpool has already done, and has reached this decision on the basis of entirely independent but precisely identical experience—namely, that children, provided they are kept warm, flourish amazingly in open air, however inclement the weather, and, besides responding more rapidly to surgical and other treatment, remain free from the common ailments of children. No one who has ever been in charge of a children's ward or hospital will fail to recognize the importance of the latter circumstance.

THE INFLUENCE OF ENVIRONMENT ON ENZYMIC ACTION.

The *Journal of Physiology* (Nos. 2 and 4, 1910) contains an interesting communication from Dr. F. W. Pavy and Dr. H. W. Bywaters on the influence of environment on enzymic action. They point out that it has been long known that the power of the liver to convert glycogen into sugar increases greatly *post mortem*, and this suggests that it is not alone the presence of the ferment or its quantity which determines the result. Their first experiments were made with yeast; an unboiled extract of 10 per cent. strength was made, 5 c.cm. of this product being used to convert 1 gram of saccharose and water for two hours at a temperature of 40°. Upon the strength of the results obtained by Harden and Young, which showed the effect of boiled yeast juice in increasing the activity of zymase, they added 5 c.cm. of boiled yeast extract and compared the results. This showed the enormous influence of the boiled yeast extract. For example, 5 c.cm. of unboiled yeast extract produced 51.2 mg. of invert sugar, but when 5 c.cm. of boiled yeast extract were added to the same quantity, no less than 394 mg. were formed. Further experiments showed that this result varied with the amount of boiled yeast extract used. Other experiments showed that this action of the boiled yeast extract depended upon its acidity, and that precisely the same result could be obtained by adding equivalent quantities of decinormal solution of acetic acid, while, on the other hand, basic substances diminished or completely destroyed the invert action. Experiments with diastase obtained from the liver of the oyster showed that boiled extract of oyster liver also enormously increased the diastatic action of the unboiled oyster extract, although not to the same extent as in the case of yeast, while acids and alkalis also favoured or inhibited the enzymic action in a similar manner. Injection of solution of sodium carbonate into the liver completely arrested the *post-mortem* production of sugar, and here again acidity seemed to be the determining factor. The authors quote Magnus-Levy's observations on the production of acid in the liver as a *post-mortem* event, and they show that this is true also of blood, spleen, kidney, pancreas, and muscle, the production of acidity setting in immediately after death. As fluoride is known to be a strong inhibitor of enzymic action, it was thought it might also inhibit *post-mortem* production of acidity and this was found to be the case. The authors suggest that the activation of the enzymes in the conversion of starch into sugar for the nutrition of the embryos of plants may result from the simple formation of an acid in the seed.

INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The seventh International Congress on Tuberculosis will be held in Rome next September (24th to 30th). The congress, which is under the patronage of the King and Queen of Italy, will be presided over by Professor Guido Baccelli. The work of the congress will be distributed among three sections, dealing respectively with (*a*) the etiology and epidemiology of tuberculosis; (*b*) the pathology and therapeutics (medical and surgical) of tuberculosis; (*c*) social defence against tuberculosis. A special committee is organizing an exhibition of social hygiene, to be held at the same time with the congress. The Secretary-General of the congress is Dr. Vittorio Ascoli, to whom all communications relating thereto should be addressed at 36, Via in Lucina, Rome. The subscription for members is 25 francs; tickets can be obtained for their relations for 10 francs. The arrangements for this country have, at the request of the Italian authorities, been placed in the hands of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, 20, Hanover Square, London, W. An executive committee has been formed for the purpose of arousing interest in the congress in this country, and for collecting information, papers, etc., and inducing local authorities to send delegates to be present. The following form the committee: Sir Shirley Murphy, Professor Osler, Professor G. Sims Woodhead, Dr. Arthur Newsholme, Dr. Theodore

Williams, Dr. T. D. Acland, Dr. Hector Mackenzie, Dr. E. W. Hope, M.O.H. for City of Liverpool, Dr. Nathan Raw of Liverpool, Dr. R. W. Philip of Edinburgh, and Dr. J. J. Perkins, who will act as honorary secretary. A representative national committee has also been formed. Communications relative to the congress should be made to the Honorary Secretary of the National Association for the Prevention of Consumption, to whom also intending contributors should send their papers.

THE ANNUAL MEETING, LONDON, 1910.

THE Executive Committee of the Annual Meeting, London, 1910, met on Monday, February 20th, to wind up the financial business of the meeting and pass the accounts. The balance-sheet submitted showed that the total receipts amounted to £4,388. The total expenditure amounted to £4,354. The committee agreed to vote the balance of £34 towards the Office Staff Superannuation Fund and the Office Staff Cricket Club respectively, as an expression of its appreciation of the very able assistance rendered by the entire staff of the central office to the officers and various committees responsible for the arrangement of the London meeting.

ON March 5th a monument to the late Professor Cornil was unveiled at the Paris Medical Faculty. The President of the French Republic presided at the ceremony.

A COMPLIMENTARY dinner is to be given by former students of King's College Hospital to Sir David Ferrier, M.D., F.R.S., to congratulate him on receiving the honour of knighthood. The dinner will be held on Wednesday, March 29th, and any King's man who may not have received an invitation is requested to communicate with the Honorary Secretary, Ferrier Dinner, King's College Hospital, W.C.

AMONG the fifteen candidates recommended by the council for election into the Royal Society are Dr. W. E. Dixon, professor of materia medica and pharmacology at King's College, London, and university lecturer in pharmacology in the University of Cambridge; Dr. J. B. Leathes, professor of pathological chemistry in the University of Toronto; Mr. E. A. Minchin, of the Lister Institute of Preventive Medicine, professor of protozoology in the University of London; and Dr. R. Muir, professor of pathology in the University of Glasgow.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Medical Examination of Territorial Recruits.—Mr. Hunt asked whether, seeing that county associations are only allowed 1s. for the medical examination of each recruit, and that the shilling is only paid for those recruits whom the doctor passed, what steps were taken to prevent this small amount of payment having the effect of causing inefficient recruits to be passed. Mr. Haldane answered that the grants paid to associations for these and other medical examinations formed a common fund from which fees were paid when necessary. There were many cases where fees were not payable, as in camp. There was no reason to think that medical practitioners negligently passed medically unfit recruits into the force. Mr. Hunt then asked whether a shilling was considered enough remuneration to the medical officer, whether the recruit passed or not. Mr. Haldane replied in the negative, and said it depended on the circumstances as explained, and the shillings were put into a common fund.

Small-pox and Vaccination (Scotland).—Dr. Hillier asked the Lord Advocate whether he was aware that the Local Government Board for Scotland, in a recent communication to the Public Health Committee of Edinburgh and Leith, had, in suggesting the provision of further hospital accommodation for small-pox, alleged as one of their reasons for doing so the danger to the community consequent on the slackening of compulsory vaccination; and, if so, what steps the Local Government Board for Scotland proposed to take to bring this danger to the notice of other sanitary authorities. Mr. Ure replied that the hon. member's inquiry was probably based on the wording of a report obtained by the Local Government Board for Scotland which was communicated by them to the local authority of the city of Edinburgh. He was informed that the Board on February 28th, 1911, communicated with all the local authorities in Scotland that did not appear to have made provision for the isolation and treatment of cases of small-pox, requesting to be informed of the steps they proposed to take to secure that such provision would be available in the event of a case or cases of small-pox occurring. He was not aware that the ground alleged for making this recommendation was the increasing charges from the diminution in the number of vaccinations.

Small-pox (Vaccination).—Mr. Astor asked how many cases of small-pox so far returned in London had been vaccinated, in how many revaccinated during the past ten years, and in how many were they unvaccinated; and what had been the respective number of deaths in the above three classes of cases. Mr. Burns said that the information asked for was as given below:

Return of Cases of Small-pox compiled from Metropolitan Asylums Board Sheets up to Sunday Evening, March 12th, and of Deaths from Small-pox up to March 11th.

	Ages.					
	0-10.	10-20.	20-35.	35 and Over.	Total Cases.	Deaths Among those Cases.
Vaccinated	4	9	13	15*	41	2
Unvaccinated	8	3	2	—	13	6
	12	12	15	15	54	8

*One patient in the vaccinated group, aged 37, was stated to have been revaccinated at the age of 10 years. This case had not died. No other vaccinated patient had been vaccinated or revaccinated since infancy, except after having contracted small-pox.

Vaccination of School Children.—Mr. Ramsay Macdonald asked if the Trustees of the French School, Soho, had required children attending the school to be vaccinated, and had ordered the exclusion of children not vaccinated. Mr. Runciman replied that he took the reference to be to the Westminster French Protestant Church School. He had no information as to what steps might have been taken of the nature indicated. The school was not a public elementary school in receipt of grant, and it did not appear to be within the power of the Board of Education to intervene in the matter.

Vaccination and Exemption Certificates.—Dr. Hillier asked the President of the Local Government Board whether, in view of the recent outbreak of small-pox, and the continued increase in the numbers of children exempted from vaccination, he would give instructions to have issued with the vaccination notices a circular pointing out the value of vaccination as a means of preventing the contraction of small-pox. Mr. Burns replied that the suggestion was not one which he was able to adopt. Dr. Hillier then asked if the right hon.

gentleman was aware that at the present moment in many localities 50 per cent. of the children were being exempted from vaccination. Mr. Burns answered that he was aware that exemption from vaccination was on the increase, but he did not know one case of 50 per cent.

Vaccination.—In answer to Mr. Wedgwood, Mr. Burns said on Monday that he could not state the number of public vaccinators who had been appointed as medical inspectors of school children. The Local Government Board had stated that both they and the Board of Education considered that the office of medical inspector of school children might with advantage be combined with the office of medical officer of health in a county district, and that, amongst the other public offices which a medical officer of health might be allowed to hold was that of public vaccinator.

Chicken-pox (Deaths).—In reply to Mr. Crawshay Williams the President of the Local Government Board stated that the numbers of deaths, certified as resulting from chicken-pox, of children under 15 years of age in England and Wales were 93 in 1908, and 94 in 1909. The vaccinal condition of these children was not stated in the death returns. Although chicken-pox in the vast majority of cases was a very mild disease, it was well known that severe cases occasionally occurred which might be fatal.

Measles.—In reply to Mr. Jowett the President of the Local Government Board stated that, having regard to the statistics which were regularly issued by the Registrar-General, he doubted whether any further return of deaths from measles was required. As regards the methods adopted for dealing with measles in London, much information would be found in the report of the Medical Officer of Health of the county for the year 1904.

Precautions against Cholera.—Earl Winterton asked the President of the Local Government Board what steps had been taken at the Channel ports to examine medically persons arriving from districts in Eastern Europe where cholera existed. Mr. Burns said that the steps to be taken in regard to cholera were governed by the Order of the Local Government Board of 1907, and were similar to those which were to be taken in regard to plague. These he had already explained. With a view to reassuring the noble lord, he might say that he was advised by the medical department that the danger of importation of cholera infection by way of the Channel ports was extremely remote.

Beri-beri Cases at Galway.—Mr. Patrick White asked the Chief Secretary for particulars as to the cases of beri-beri under treatment at Galway, and Mr. Birrell replied that there were at present four patients from a Norwegian ship under treatment in the intercepting hospital at Galway, three of whom were undoubtedly suffering from beri-beri, whilst the other was under observation. The Local Government Board understood that the patients were in a well-ventilated ward in every way suitable for their treatment, and were under the charge of three nurses. One patient became suddenly delirious and violent, but was got under control by the nurses, and had become quiet before the medical officer arrived. The latter had since procured the assistance of two male attendants, one of whom would at all times be on duty, and the other easily available.

Anthrax.—Mr. Jowett asked the Secretary of State for the Home Department if his attention had been called to the report of an inquest held on the body of a man named Richard Richards, of Bradford, who had been employed by Messrs. Campbell and Harrison, woolcombers, of Shipley, at which it was found that the cause of death was anthrax, contracted in the course of his employment; and whether all the precautions now enforced for the protection of woolsorters when they were working with or near dangerous wool were also enforced when similar classes of wool were dealt with in woolcombing establishments; and, if not, what he intended to do in the matter. Mr. Churchill replied that he had received a report on this case. The circumstances were unusual, as the disease did not show itself until some time after the deceased had left his employment at these works. The Wool Regulations required that certain precautions should be observed in woolcombing establishments, and these were fully observed at the works. He was also informed that wasted wool only was dealt with in the carding-room in which the deceased worked. The case called for further inquiriry, which should be made at once.

Anthrax and Yew Poisoning.—In answer to Mr. Bathurst, who asked as to the prevalence of anthrax and its confusion in some cases with yew poisoning, Mr. Gulland said that in every case in which anthrax was suspected the veterinary inspector was required to give information as to the possible cause of the outbreak, and such further inquiries were instituted as the circumstances required. In almost every case of sudden death among cattle the existence of anthrax might reasonably be suspected. A microscopic examination of the blood would show whether the suspicion was correct or whether the death was attributable to some other cause. It was well known that yew poisoning frequently caused the death of animals, and the Board did not consider that any advantage would be gained by further investigations.

Rice (Polished and Adulterated).—In reply to Mr. C. Bathurst, Mr. Burns said that copies of the report made by Dr. Hamill, of the Local Government Board's Food Department, had been circulated to the local authorities concerned in the administration of the Sale of Food and Drugs Acts, and he found that action had been taken by them in accordance with the recommendations in that report. As a result, a considerable reduction had been made in the amount of extraneous matter left on the rice after the process of facing, and it did not seem necessary to take further action at the present time. He might explain that the process of polishing or facing did not remove any of the nutritive elements of the rice.

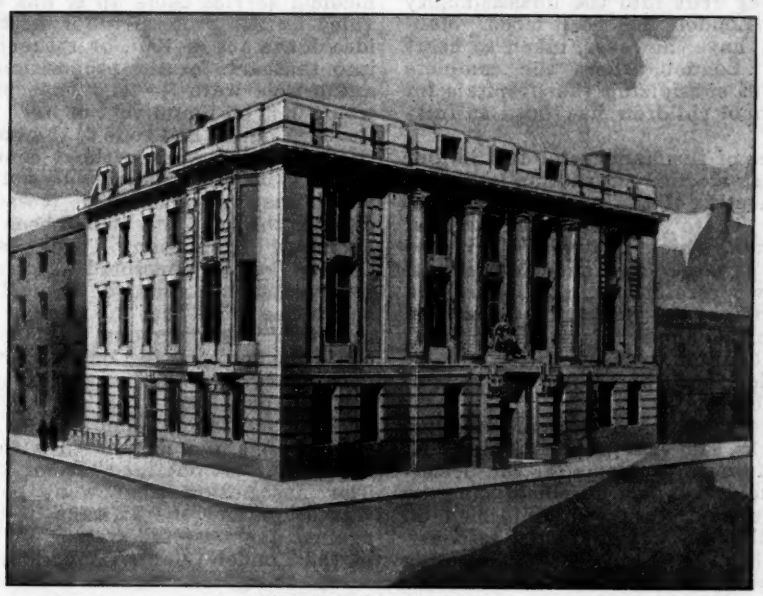
The Shops Bill to consolidate, amend, and extend the Shops Regulation Acts, 1892 to 1904, was issued on Monday. The hours of shop assistants are limited to sixty per week, exclusive of meal times, with an afternoon holiday on one week-day. Overtime is allowed except in the case of boys under 16 and girls under 18 years of age. With regard to Sunday closing, Jewish shopkeepers who close their places of business from nightfall on Friday to nightfall on Saturday are permitted to open on Sundays for the convenience only of Jews. Local authorities are empowered to fix the hours of closing shops in their districts, the hour to be not earlier than 7 and 1 o'clock on the early closing day. Local inquiries may be held for the purpose of promoting and facilitating early closing, all expenses of the inquiry to be paid by Parliament. In every shop where female assistants are employed seats behind the counter are to be provided for them in the proportion of one seat for every three assistants. The trades and businesses exempted from the provisions of the Act are: Public-houses, refreshment rooms, shops where motor and cycle accessories are sold to travellers, and newspaper, sweetmeat, confectionery and tobacco shops, and dairies. The sale of bread is permitted up till 10 o'clock on Sunday mornings, and hairdressers may keep open until 2 o'clock in the afternoon.

The Midwives Act.—Mr. Burns informed Dr. Addison that the Government were not without hope that it might be possible to introduce a bill to amend the Midwives Act this session.

ROYAL SOCIETY OF MEDICINE'S NEW HOUSE.

THE Royal Society of Medicine (London) is now erecting, on a site at the corner of Wimpole Street and Henrietta Street, Cavendish Square, a house which, it is expected, will provide ample accommodation for many years to come, even if the society continues to increase, as it is confidently expected it will. The site has an area of nearly 100,000 square feet, and the building, which, as will be seen from the illustration, is of classical design, will have its main entrance in Henrietta Street and a second commodious entrance from Wimpole Street.

It will consist of a large and well-lighted basement, a ground floor, and three additional floors. On the ground floor will be a handsome and spacious vestibule, two meeting halls—one capable of holding about 500 persons, the other somewhat smaller, holding about 150 persons—patients' rooms (for both sexes), cloakrooms, cashier's and porters' rooms. The whole of the first floor will be taken up by the library and by the offices of the secretary, editor, and clerks. The library will extend the whole length of the building, and will be 110 ft. long, 28 ft. wide, and 19 ft. in height. The Periodical Room will be an annexe extending back 21 ft. from the Library proper at its eastern end. The Library will have a gallery; and a mezzanine room with additional tables for readers will open off the gallery, and extend back the whole depth of the building at the Wimpole Street end. The main part of the second floor will be occupied by the Council Room, over the centre of the Library; and by two Committee Rooms—one over either end of the Library—each of which will communicate with the Council Room. There will also be a tea and conversation room, and lavatories. On the third floor there will be a Museum; a room properly fitted and equipped for examining specimens and for histological work; a smoking room; a tea and conversation room and ladies' lavatories. In the basement there will be dressing rooms and lavatory, and storage for 250,000 volumes. The architect is Mr. John Belcher, R.A.



(From the Architect's drawing.)

The site of the new house was purchased out of invested money, and at the meeting of the fellows last month it was decided to make a special effort to raise the whole cost of the building, about £30,000, by means of voluntary gifts from the fellows of the society, the members of the sections, and the friends of fellows and members. At the beginning of March promises of £12,224 had been given by 614 out of 2,313 fellows, 112 out of 976 members and other subscribers, and of this amount £7,558 had actually been received. The building is now being rapidly proceeded with, and as this involves periodic payments as the several stages of the work are completed, an appeal is made to fellows and members to send the amounts of the donations or subscriptions they intend to give to the treasurers as soon as possible. The office of the society is at present at 15, Cavendish Square, W. In a circular letter issued by the President, Sir Henry Morris, it is pointed out that fellows, in considering the amount of their contribution to the building fund, should bear in mind that before the amalgamation many of them belonged to several of the societies now amalgamated, and paid annual subscriptions of five guineas or more, some even as much as ten guineas; the annual subscription since the amalgamation is three guineas, and fellows of the society, besides receiving the volumes of proceedings, obtain greater advantages than were enjoyed even by those who were members of several of the former societies. The society's financial position is strong, owing to the fact that the debenture debt is more than amply secured by the property in Hanover Square; the rent received from the present leaseholders of that property not only covers the interest on the debenture debt, but provides a surplus of over £1,600 a year.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

LONDON.

NOTIFICATION OF OPHTHALMIA NEONATORUM, CEREBRO-SPINAL FEVER, AND CHICKEN-POX.

THE London County Council has issued an Order under the Public Health (London) Act, 1891, making the provision of that Act with respect to the notification of infectious disease applicable to the disease known as ophthalmia neonatorum. The Order has been approved by the Local Government Board and came into force on March 13th. The Council has also renewed for another year the Order making the notification of cases of cerebro-spinal fever (epidemic cerebro spinal meningitis) compulsory.

The Council decided on March 14th to make chicken-pox a notifiable disease under the Public Health (London) Act, 1891, for three calendar months from March 22nd, 1911. The Public Health Committee, which brought forward the recommendation, stated that slight cases of small-pox were sometimes mistaken for chicken-pox, and so were not isolated as early as they would have been had the real nature of the disease been recognized.

MANCHESTER AND DISTRICT.

THE MEDICAL TREATMENT OF SCHOOL CHILDREN IN MANCHESTER.

FOR some time past it has been increasingly evident that the facilities for the medical treatment of school children found on inspection to be defective are far from satisfactory in Manchester. The Education Committee has simply been content with insisting that the necessary treatment should be obtained, leaving it to the parents to go either to private doctors or to hospitals as they liked. The practical outcome, however, has been the overcrowding of the out-patient departments of the charitable hospitals and a strain on the resources of the hospitals which can

no longer be met. Frequent protests made by members of the hospital staffs have been practically disregarded. The enormous number of children that presented themselves have made it quite impossible to inquire into the parents' ability to pay for treatment, and the abuse of the charities is acknowledged even by members of the Education Committee. The tendency of events was finally shown by what is officially described in the epitome of the proceedings of the Education Committee as "an application from the Manchester Children's Hospital for financial assistance in respect of school children referred to the hospital for treatment." The committee was not sure of its ground at the time, but there is considerable danger that unless some radical steps are taken Manchester may drift into the unsatisfactory position with which London has been faced. Manchester medical men have, however, taken to heart the object-lesson of London, where the complete failure of the system of subsidizing the hospitals for the treatment of school children has been so fully demonstrated.

The joint committee of the Manchester and Salford Divisions of the British Medical Association last week convened a general meeting of the profession to consider the question. There was an attendance of about 150 medical men, which in itself is evidence that the profession is at last roused, and the practical unanimity on the two resolutions laid before the meeting ought to convince the Education Committee that the profession will no longer tolerate the present policy of drift, which is unfair to the charities, equally unfair to the profession, and shamefully negligent of the interests of the children.

Dr. T. Arthur Helme, the chairman of the meeting, in his opening remarks, said that public opinion had arrived at that point where problems for the betterment of the people held the field. Medical men, by virtue of their profession, were well informed on these questions, and this imposed on them a responsibility both individually and collectively. The meeting was called not simply to discuss the interests of the profession, which, however, must be safeguarded, as the true interests of the profession never conflicted with the interests of the people. The interests of the profession were threatened by the maladministration of the charities. The treatment of school children by public authorities would soon be an established fact, and it was the duty of the profession to use its influence to direct aright the policy of the authorities. First of all the meeting would have to come to some decision on one important principle—the relation of charitable institutions to the medical treatment of school children. Should it be given gratuitously by the honorary medical officers of charitable hospitals, or, if not, was it right that the charities should accept sums of money, either as fees or subscriptions, from the education authority? He reminded the meeting that the British Medical Association had adopted a resolution against the reference of school children to the hospitals whether accompanied or not by payments or subsidies, and he called on Dr. Wolstenholme to move a similar resolution.

Dr. Wolstenholme moved:

> That voluntary hospitals and other medical charities should not be used for the treatment of school children, referred for treatment by the Manchester Education Committee, whether or not accompanied by payments or subsidies.

He said that he spoke both as a ratepayer and a general practitioner. Medical inspection without treatment was pretty nearly a waste of money, and the question was how to get treatment without injustice to the charitable or to the profession. To his mind, the only way was that the State should pay for the treatment where the people themselves were unable to pay for it. He did not think that the Education Committee could cover its responsibility by paying a subsidy to a hospital, and whatever payment the authority made should go to the men who treated the children, and not to an institution.

Dr. Dulberg, who seconded the resolution, said that it was an injustice to expect the medical profession to treat cases gratuitously.

Sir Victor Horsley, in supporting the resolution, said the question had been referred by the British Medical Association to the whole profession as it was not a mere Association matter. Manchester was fortunate in having an open field on this question, while in London they had had to uproot weeds planted by other people. The question that had to be considered was one that concerned the national physical well-being and the profession had responsibilities to the State. Unfortunately the State had got the idea that the profession existed to do work without remuneration—an idea that was entirely due to the fault of the profession, which was the only one that had muddled together charity and State responsibility. That had led to the position that if a question of a national medical service came up it was expected to be provided by the profession for nothing. This was the idea of the Act of 1907, or rather this had been read into that Act, for the proposition that the education authorities were to send the children to hospitals would not be found in the Act. Yet in London the County Council had gone to the hospitals and had got them to do the work without consulting the medical staffs. The hospitals relied on the almoner system which was a very weak reed. It was impossible to refer cases to the Poor Law as had been well shown by the Poor Law Commission. Three years ago the London County Council appointed a committee on which he represented the British Medical Association; that committee found that the number of children needing attention was enormous, and by no possible means could the hospitals in London provide for all, and that nothing would meet the case except school clinics in suitable positions. The use of the hospitals was opposed, but the London County Council disregarded the protests and negotiated with the hospitals. No support was obtained from the hospital staffs. The Association then went before the Board of Education, and the attitude of the Board was now against the hospital system. The hospital scheme of the London County Council had been running for fifteen to eighteen months, but it was now an admitted failure. If the hospital scheme could succeed anywhere, it ought to have succeeded in London; but it had failed completely. Only about one-third of the children ever got to the hospitals, and those who did often crowded the hospitals at inconvenient times, and many of them were sent away untreated. Much distress and suffering had been caused to these unhappy children by the action of the London County Council. It would always remain to the credit of the Labour Party that it recognized ten or twelve years ago that medical inspection was a weapon by which we could fight against physical deterioration. Even the Board of Education had written condemning the London County Council because it was not doing inspection properly. All this public evil was due to what was called economy. It was part of a cheese-paring policy, and no great national movement could be carried out by such means. The most convenient method of treatment from the children's point of view was the establishment in the most important centres of child population of school clinics, small houses of three or four rooms, suitably staffed and maintained by the education authority. It was questionable whether the example of Bradford should be followed of staffing these school clinics with whole time medical officers. The feeling of the British Medical Association was that they should be staffed by the practitioners of the district, and a scheme on these lines had been satisfactorily carried out in four Divisions of the Association in London. The work was organized by medical committees, half of the members being members of the British Medical Association, and the other half non-members of the Association. The committee selected the medical officers to do the work, and also provided that specialists should be brought in when necessary. The remuneration of the medical officers was that adopted by the Representative Meeting of the British Medical Association. Side by side with this system was the voucher system under which the patient was treated at the doctor's own surgery and a voucher given, the payment being

made by the local education authority. But he thought that the method most likely to find general adoption was the school clinic, staffed by the practitioners of the district. He had read with interest the discussion in the Manchester Education Committee, and it would be necessary for the profession in Manchester to approach the Education Committee with a well-thought-out scheme. He strongly supported the resolution, as he was convinced that the hospital system was utterly bad.

The resolution was carried unanimously.

A second resolution was then proposed by Dr. C. Melland as follows:

> That this meeting calls on the Manchester Education Committee to make arrangements, in co-operation with the medical profession, by which the medical treatment of school children found on medical inspection to be defective shall be carried out by private practitioners, apart from charitable hospitals, either at recognized centres or clinics to be specially established for the purpose, or at private surgeries, or when necessary at the homes of the children; and, further, that the Joint Committee of the local Divisions of the British Medical Association be authorized to represent the profession in negotiations and arrangements with the Education Committee, with instructions to co-opt a proper proportion of members for the purpose who are not members of the British Medical Association.

Dr. Melland said that much of the work to be done was new, but that should not be an excuse for throwing more work for nothing on to medical men. The sending school children to the already overburdened hospitals, such as the Ancoats Hospital or the Northern Children's Hospital, had rendered it impossible for the work to be satisfactorily and thoroughly done.

Dr. Cotterill said the profession was at one on this matter, and medical men must absolutely refuse to have further work thrust upon them for which they received no remuneration. The Death Certification Bill was only one example, for under that bill medical men had not only to give a certificate, but to hold a sort of preliminary inquest without any fee, and it was high time to protest against this attempt to exploit the profession.

Dr. Ritchie, School Medical Officer for Manchester, said that Manchester flattered itself that it had done better than London, but it was by omission rather than by commission. London had moved too fast, but Manchester had not moved at all. The Education Committee simply insisted on treatment; it did not refer the children to any one. In Manchester the whole question of treatment was an open one. He did not think there would be any immediate result from the resolution, as it would be a costly business, and nothing would be done until the Government gave some money. The outcome lay with the profession very largely. The Manchester Education Committee never thought of getting everything for nothing, though, of course, it would try, as any business men would try, to get as much as possible for as little as possible. The meeting would recognize that as an official he was unable to take part in any movement, and all he could say was that any scheme favoured by the profession should be a workable one, or it could not be accepted.

Dr. Westmacott had felt for some time that something would have to be done in this matter. No one had felt the work more than he had at the Children's Hospital, as within the last two years he had done over 1,200 operations on school children at the hospital, and the cost of this work ought not to be thrown on the charitable public. The attitude of the parents would be that if the State required this work to be done the State must pay for it. He had opposed a grant to the hospitals, because hospital committees had no right to undertake the work and receive money for it, since by so doing they were robbing the poor of the work that ought to be done for them in the ordinary way of charity. The only way was for the authority to examine the children as it did now, and then, after the children had been selected the parents should be notified, and the form taken to the parents' own doctor, or the case referred back to the school clinic. In Manchester one central establishment would be first needed where specialists could act, and where general practitioners should be at liberty to go and treat cases.

Dr. Vipont Brown asked that the resolution should be modified so as to allow of whole-time appointments at the clinics, as at Bradford. He would have the greatest objection to his patients being treated by neighbouring practitioners. He moved that the words "private practitioners" should be altered to "medical practitioners," so as to allow of the appointment of whole-time medical officers for the clinics.

This amendment having been seconded, Dr. Brassey Brierley said he was greatly disappointed with Dr. V. Brown's suggestion, and did not agree with Dr. Westmacott's idea of a large central establishment. As for Dr. Ritchie's suggestion that nothing would be done immediately, he thought there was no need to wait till the Government provided money. It was the business of the profession to pave the way, and then the funds would soon be forthcoming.

The amendment was then put to the meeting, but obtained less than a dozen votes, and the original resolution was carried *nemine contradicente*. The meeting closed with a hearty vote of thanks to Sir Victor Horsley, who had kindly come from London specially to attend the meeting.

It may be noted that on the day following the meeting the *Manchester Courier*, in a sympathetic leading article on "The Abuse of Medical Charities," pointed out that at a recent trade union conference the suggestion was made that working men in London should withhold their subscriptions from medical charities as a protest against the present use of the hospitals by the London County Council. The article went on to express the opinion that the arrangement between the Education Committee in Manchester and private practitioners through the local Divisions of the British Medical Association, as suggested at the meeting in Manchester, was desirable from the point of view of the medical charities which "were not designed and are not supported for such work," and that we were now threatened with a perpetual flow of child patients to our medical hospitals, which had more than enough work to do among the adult poor. The editor considered that the recent paper by Dr. Niven before the Statistical Society and the meeting addressed by Sir Victor Horsley "should do good service by bringing before the public the importance of health, the necessity of supporting the provision made for fighting disease, and the desirability of preventing abuse of our medical charities by families well able to obtain medical assistance for themselves and their children from the private practitioners."

THE COST OF DISEASE.

At a meeting of the Manchester Statistical Society last week, Dr. Niven, M.O.H. for Manchester, read a paper on the cost of disease. He said that in one of the appendices to the report of the Poor Law Commission Mr. W. Marlow gave a table for thirty-three societies with 2,894,000 members, showing that the amount of sick pay and funeral claims for the year 1905 reached the total of £2,313,113. It was not clear whether medical attendance was included in this, but at the same rate in the city of Manchester the cost would be over £523,000 a year. It was probable, however, that the total cost of disease in Manchester far exceeded this amount. He gave the following estimate of the annual expenditure on sickness and prevention of sickness in Manchester:

	£
Public voluntary institutions, including nursing	110,000
Poor Law expenditure on sickness	70,000
Private expenditure on sickness	300,000
Municipal sanitary	116,000
Municipal education	20,000
Funerals	40,000
Drugs and appliances, private...	40,000
Miscellaneous	10,000
Employers' Liability Act	30,000
Income of midwives	5,000
Total	£741,000

This was the cost of disease in its totality, but from the standpoint of life values those diseases which exacted their highest death-toll in the middle period

of life were much more destructive of economic value than those which were most fatal in the early and late ages. Moreover, losses in the middle period of life affected also the life and fortunes of the next generation. He estimated that the economic loss from tuberculosis alone in Manchester was not less than £500,000 a year, and if the city, by expending £1,000,000, could effect its extinction, the result would be cheaply arrived at. It was quite certain that the amount of fatal tuberculosis was comparatively small among those sections of the community who were well off, and that well-to-do artisans and their families suffered far less than labourers and their families. The mortality from phthisis fell at a more rapid rate between 1860 and 1900 than it had done since, and it was noticeable that the steepest period of its fall coincided with a great access of commercial prosperity as had been recently the case in Germany, an increasing proportion of the community reaching a point at which the family could be maintained in a well nourished condition. This suggested the very important question whether the reduction of tuberculosis could be most effectually brought about by expending money in raising the level of nutrition of families in which tuberculosis had made its appearance or by housing consumptives in sanatoriums, or other methods, or by a judicious combination of these methods. From the crude materials out of which his estimate was constructed it was certain that questions relating to disease involved enormous sums of money. He hoped that this country would show an appreciation no less keen than that displayed abroad of the money value of health, and at least an equal ability to turn it to account for the general welfare.

LEEDS.

Dental Department of the Leeds Public Dispensary.

When some few years ago the dental department of the Leeds Public Dispensary was instituted, it was arranged that the members of the honorary dental staff should in each case be appointed for a period of three years. Recently the feeling has naturally arisen that it is desirable that the dental staff should hold office under the same conditions as to length of service as the other honorary officers of the institution. Opinion was practically unanimous on the subject, and at a meeting of the subscribers held recently the necessary alterations in the rules were made. The election of the members of the honorary staffs of the general infirmary and of the dispensary is in each case in the hands of a special election committee, influential in character and limited in number. The old custom which used to prevail in Leeds, and which still exists in many other places, under which the election of the honorary staff is entrusted to the general body of the subscribers, entails on the unfortunate candidate labours which are almost endless, which are not infrequently undignified, and which tend to accentuate the unpleasant features of contests for honorary posts. It is felt that a more satisfactory result is obtained by placing the election in the hands of a few men who can seriously consider the claims of the candidates, and who in proportion to their small number will have a greater sense of responsibility. At a meeting of the special election committee the following members of the staff were elected on the new footing:

Honorary Dental Surgeons: Messrs. Percival T. Leigh, Walter Marston, A. G. G. Plumley, Stephen D. Hey, David Saville, and J. Newsome Taylor.
Honorary Assistant Dental Surgeons: Messrs. Thomas Mitchell, James W. Mower, and Geoffrey A. Phillips; and three new appointments to vacancies: Messrs. J. V. Lambert, H. A. Mahoney, and H. R. Bentley.

The success of the Leeds School of Dentistry may now be regarded as secure; the students are increasing in number, and the work done is being more and more appreciated by the class of the public for whom the charity is intended. Some description of the department, which has lately undergone considerable development, will shortly be given in this column.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

The Edinburgh Royal Colleges of Physicians and Surgeons.

For some time there has been a feeling of resentment on the part of the Royal College of Surgeons of Edinburgh regarding the precedence which has been in the past given to the Royal College of Physicians. This feeling has now taken a more active form, inasmuch as it is to come within the purview of the law courts. Briefly the history is this. On March 13th, 1901, Lord Balfour of Burleigh, then Secretary for Scotland, intimated to the Royal College of Surgeons his decision that on the occasion of the presentation of addresses to His late Majesty King Edward VII the Royal College of Physicians should take precedence over the Royal College of Surgeons, and that this decision should be acted on by the Scottish Office until disturbed by any higher authority. Recently the College of Surgeons presented a petition to the Lord Lyon King-of-Arms claiming on various grounds, and in particular by virtue of the Royal Parliamentary and other grants in their favour, as well as by virtue of usage, that on all public or ceremonial occasions it was entitled to precedence over the Royal College of Physicians of Edinburgh, or otherwise that such precedence should be granted to them. The College holds that Lord Balfour of Burleigh in 1901 acted *ultra vires*. Answers to the Surgeons' petition were lodged by the Royal College of Physicians, explaining that on February 9th the college presented a petition to His Majesty the King praying that His Majesty would be graciously pleased to ordain and declare that on all occasions, place, pre-eminence, precedence, and pre-audience, as between the two colleges, should be given to the Royal College of Physicians, and to grant a warrant to the Lord Lyon King-of-Arms to see His Majesty's gracious order observed and kept, and to record the same in the Lyon Office in Edinburgh, to the end that the Officers of Arms of Scotland and all others upon occasion may take full notice, and have knowledge thereof. This petition is still before His Majesty, and it is submitted that the present proceedings before the Court of the Lyon King ought to be sisted *in hoc statu* to await the declaration of the King's pleasure on the petition of the Royal College of Physicians. Further, the physicians say that the petition of the Surgeons contains: (1) No statement that the petitioners hold any grant of precedence; nor (2) any reference to the grants in their favour produced by them which is sufficient to make them relevant to the petition; nor (3) any statement of any facts on which they found their contention that they enjoy a title by usage.

The Lord Lyon King-of-Arms had fixed March 9th for the purpose of hearing parties as to further procedure, but on March 8th he stated that after consultation with the Lord Advocate, the Secretary for Scotland was of opinion that the Lyon King had no jurisdiction in the matter, that it would be unnecessary to have a hearing, and that he should issue an interlocutor "in terms of the instructions he had received from the Secretary for Scotland." On this the Surgeons protested that neither the Secretary for Scotland nor the Lord Advocate for Scotland had any power to interfere with one of the courts of the realm in the discharge of its functions, or to instruct a judge to decline jurisdiction without hearing parties, and appealed to the First Division of the Court of Session, and the appeal was heard on March 14th. Mr. Horne, K.C., for the College of Physicians, said that the question was whether the Lyon King had jurisdiction as a court in this matter, or whether he simply exercised a function under the King and that the King and his executive officers had for the time withdrawn the authority. Mr. Anderson, K.C., for the Secretary for Scotland, explained that the Lyon King had framed his interlocutor in such a way as to make it look as if the Secretary for Scotland had laid down

by way of instruction the course which the Lyon King should follow. All that the Secretary for Scotland had done was to advise the Lyon King how to proceed. The petition was remitted back to the Lyon King to deal with the case.

EDINBURGH AND THE VALUE OF VACCINATION.

Following on the strong representation on the value of vaccination and revaccination and contrary representation by the Antivaccination Society, the Public Health Committee of the Edinburgh Town Council called for a report from the medical officer of health (Dr. Maxwell Williamson) and the medical superintendent of the Edinburgh City Hospital at Colinton Mains (Dr. Claude B. Ker). That report has now been made public. It says:

Without going into elaborate statistical details, it appears to us that the following facts are sufficient to justify the practice of compulsory vaccination and revaccination as a necessary public health measure:

1. *The marked fall in mortality from small-pox dating from the introduction of vaccination.* This has been noticed everywhere where comparative returns of the number of small-pox deaths are available.

2. *Vaccinated persons suffer from small-pox in a much smaller proportion than do the unvaccinated,* and the more recent the vaccination the less is the chance of attack. Some instances may be quoted:

(*a*) At a time when only 10 per cent. of the children of London were unvaccinated, of 2,863 patients admitted to Homerton and Fulham Hospitals, no less than 76 per cent. had never been vaccinated. The unvaccinated population, therefore, yielded for its numbers nearly five times as many cases of small-pox as the vaccinated.

(*b*) M'Vail, analysing the experience of Warrington, Dewsbury, Gloucester, and Leicester, shows that at all ages the vaccinated population of the houses invaded by small-pox in these towns had a much lower attack-rate than the unvaccinated, and the distinction between the two classes becomes more marked when the susceptibility to the disease of children under 10 years of age is alone considered.

3. *Since the introduction of vaccination, the age at which persons are most likely to take small-pox has altered.* Befor vaccination was introduced nearly every one took small-pox in early life, just as we see with measles to-day. Nowadays in vaccinated communities the patients are chiefly adults, while in unvaccinated communities children take small-pox as freely as ever.

Thus, in Gloucester, a town in which, just before the epidemic, 85 per cent. of the infants were left unvaccinated, no less than 64 per cent. of the persons attacked were under 10 years of age; whereas in Glasgow, a well-vaccinated city, out of the 1,730 patients in 1900, only 5.5 per cent. were under 10 years.

4. (*a*) *Of those who take small-pox, the vaccinated show a lower mortality than the unvaccinated.* In the year 1900, of 9,659 cases treated in the London hospitals, 11.5 per cent. of the vaccinated died, as against 51.6 per cent. of the unvaccinated.

(*b*) *In the vaccinated themselves the mortality is less in those who present numerous or good marks.* In London the percentage death-rate of those with one mark was 13.5, with two marks 8.4, with three marks 6.4, and with four or more only 3.8. Similar differences are noted if the character and superficial extent of well-marked surface is compared with the death-rate.

(*c*) *Severe forms of the disease occur with much greater frequency in the unvaccinated.* In Glasgow, in 1900, 56 per cent. of the unvaccinated cases were of a very "severe type," whereas only 19 per cent. of the vaccinated were of a "very severe" type. We noticed the same in the last Edinburgh outbreak.

5. *Revaccination properly practised has been proved to afford complete protection against small-pox.* (*a*) In Germany, since revaccination has been enforced at school age and military service age, small-pox is so rare that it is unnecessary to maintain hospitals to deal with it. The cases that do occur are largely among foreigners. Berlin has 12 beds for small-pox in a pavilion of a general hospital. London has 2,500 in hospitals specially constructed and maintained for the purpose.

(*b*) Hospital attendants and nurses, if revaccinated, do not contract small-pox. Of 734 attendants employed in hospitals of the Metropolitan Asylums Board, 79 had had small-pox previously and 645 had been successfully revaccinated before undertaking duty. None of these took the disease. The remaining 10 had not been revaccinated, and all took small-pox. In Glasgow 230 workmen were employed at Belvedere in 1903 extending the Small-pox Hospital accommodation. Of these, 217 were successfully revaccinated, and 13 refused or were passed over. Not one of the 217 took small-pox, but 5 of the 13 were attacked and one died. In the last thirty-two years in Edinburgh the only nurse who has taken small-pox at the hospital is the only nurse who refused revaccination.

We consider that the above reasons are sufficient to justify our belief in the protection afforded by vaccination and revaccination against small-pox.

The objections raised by antivaccinationists may be briefly dealt with. There is not the slightest evidence in favour of the view that vaccination has increased the amount of such diseases as leprosy, tuberculosis, or cancer throughout the world. As long as arm-to-arm vaccination was practised the risk of the transmission of such conditions as syphilis and tuberculosis doubtless existed, although such accidents were extremely rare. Nowadays when all vaccination is performed with glycerinated calf lymph their possibility need not be considered. The risks of vaccination are very slight, but should the wound become dirty it may be followed by erysipelas or blood poisoning, as is also the case with other trivial scratches.

We are aware that the antivaccinationist attempts to explain away some of the figures quoted above by doubting the good faith of the medical men who note the presence or absence of vaccination marks.

In our experience the greatest care is always taken to obtain reliable data. Another surprising statement made in a tract which has been recently circulated is that nurses do not take small-pox for the same reason that they do not take the other infectious diseases which they nurse.

Unfortunately, however, the committee has only to examine the annual reports of its own hospital to find that nurses in large numbers do take all the other infectious diseases. On the other hand, in the great antivaccination centre—Leicester—six nurses are said to have taken small-pox in the last epidemic. Such accidents do not happen with a revaccinated staff. Small-pox, indeed, is the one infectious disease of our acquaintance that can be nursed with perfect safety to the attendant. It cannot be held that the fall in mortality from small-pox is merely due to improved sanitary conditions. The diseases most nearly allied to it—that is to say, the other eruptive fevers, measles and scarlet fever—are as common as ever, in spite of sanitary improvements.

ODONTO-CHIRURGICAL SOCIETY OF SCOTLAND.

The report presented to the annual general meeting of the Odonto-Chirurgical Society of Scotland on March 10th stated that there were 105 members on the roll of the society at December 31st, 1910, as compared with 107 in the former year. The financial position was considered satisfactory. Office-bearers for the year were appointed. In the evening the annual dinner was held in the Caledonian Hotel, when about fifty gentlemen were present, under the presidency of Mr. J. Douglas Logan. After the usual loyal and patriotic toasts, Mr. Naismith gave the toast of "The Edinburgh Dental Hospital and School," and Councillor Malcolm Stuart replied. Mr. Johnston gave the toast of "The Royal Colleges of Physicians and Surgeons," to which Dr. Byrom Bramwell and Dr. R. Mackenzie Johnston, replied. Dr. Drinkwater gave the toast of "The Odonto-Chirurgical Society," and the President replied.

CARNEGIE TRUST AND MEDICAL INSPECTION.

The Carnegie Dunfermline Trustees have just issued the annual report on the medical inspection of school children undertaken by them. The system carried out by the Trust is more elaborate and thorough than that adopted by any public authority, as expense is not stinted. A complete examination of the children at the four school periods is made, including inspection of every child, and complete examination of those with special defects; 4,454 children have been examined during the year. In his report on the work Dr. J. C. Bridge states that reports are valueless unless suggestions are made for betterment. He points out that two of the schools are not well situated from the health standpoint; that children lack proper nutrition and fall below the standard owing to loss of sleep and overwork as messengers after school hours; that an hour for dinner is too short a period in the school day; and that in 102 badly nourished children there was no trace of organic disease, but simply evidence of want of proper feeding. With regard to cleanliness the standard is being raised, and he urges that no house should be built without a bath, which is as much a necessity as the kitchen. The report is a most interesting volume of ninety pages of letterpress and charts.

COMPLIMENTARY DINNER TO DR. HALKET.

On his retirement from the visiting staff of the Samaritan Hospital, Dr. George Halket was entertained to dinner by the past and present honorary and acting members of the Royal Samaritan Hospital, Glasgow. Dr. Halket was one of the founders of the hospital, and had been on the staff for twenty-five years. On retiring from the post of visiting physician Dr. Halket has been made consulting physician to the hospital.

An Acquittal.

At the recent High Court of Justiciary in Glasgow, Dr. George Bell Todd had to stand his trial on the serious charge of having performed illegal operations. We are glad to say that after a trial which lasted over a day and a half the jury found so little difficulty in deciding in Dr. Todd's favour that after a brief retirement of eight minutes they were able to bring in a verdict of Not Guilty (which it is understood was unanimous).

The Scourge of Tuberculosis.

The question of the treatment of consumption by local authorities is now engaging the attention of the Local Government Board, and a mass of statistics and other data is being collected with the view to action on a comprehensive scale. The notification of phthisis has shown that in one year there were over 3,500 cases in Glasgow alone; the Health Department is now making a very careful investigation, and a census is being compiled to reveal the extent of infection. As far as the public health departments in Glasgow are concerned, they provide an out-patient department for phthisis at the Sanitary Chambers, and similar facilities, by arrangement with the parish councils of Glasgow and Govan, at five outdoor dispensaries throughout the city. To each of these a visiting physician has been appointed, a special medical assistant has been added to the staff of the medical officer of health, and four nurses supervise cases at home where necessary. Besides this, the Glasgow Parish Council provides 540 beds for phthisical cases at an annual cost of £21,000, and there are available in the sanatoriums near Glasgow, 236 beds—140 at Bridge of Weir, 52 at Bellefield, and 44 at Lanfine. These three sanatoriums, however, have been described as "all in a condition of bankruptcy more or less," and requiring increased financial support. Fully 1,200 deaths occur annually in Glasgow from phthisis, and the medical officer of health, Dr. Chalmers, has estimated that by providing 100 beds for training purposes, a number of patients equivalent to the number of deaths could receive one month's training at a cost for maintenance alone of about £8,000 per annum.

New Small-pox Hospital for Glasgow.

For the past six years the propriety of erecting a new small-pox hospital on the land at Robroystoun belonging to the Cleansing Department of the city has been under the consideration of the Health Department. At one time it was suggested that an area of about 54 acres would suit the purpose of the Hospitals Committee, but subsequently it was resolved that an area of 151 acres be acquired. The whole question has now been reconsidered, and the Town Council has decided to utilize the ground originally agreed on extending to 54 acres. The position selected occupies the highest part of the Robroystoun Estate, purchased by the Cleansing Committee some years ago for the deposit of their waste material from the city. The whole estate comprises over 680 acres, and originally cost £40 000, but has greatly increased in value by the Cleansing Department's operations. Designs for the new hospital buildings have already been submitted to and approved by the Local Government Board.

Protection of Children: A Social Problem.

At the annual meeting of Glasgow Lock Hospital special attention was drawn to the increase in the number of infants and young children admitted during the past year. Thirty children under 16 years of age were admitted, of whom fifteen were under 9 years, and several mere infants. The cause in most cases was criminal assault. The directors called public attention to this condition of things, which constituted a grave social problem, and representatives of various public bodies have had joint meetings with the view to having the state of affairs dealt with as its importance demands. The outcome has been the formation of a vigilance society to cope with the evil. At the hospital a special ward has been opened for children.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Proposed Tariff for Medical Attendance.

A vacancy for a medical officer at present exists in the town and district of Swinford, and, preparatory to advertising the same, a meeting was convened of the local guardians and clergy, which adopted a scale of fees requiring the medical officer to afford advice, attendance, and medicine to all classes at certain fixed charges. The acceptance of the scale was to be one of the conditions of the appointment. The scale was transmitted to the Local Government Board for approval, but the Board has refused its approval, and has pointed out that, however desirable it may be that a scale of reduced fees and charges should be arranged, no legal authority exists whereby a candidate for a dispensary appointment can agree to accept any formulated scale of fees for attendance on private patients. It is added that no private patients should be seen at the dispensary buildings. The Swinford guardians, on receipt of this reply, determined to refuse to make a permanent appointment until the matter had been brought before Parliament. Meantime a temporary medical officer, at a remuneration of £3 3s. a week, is to be nominated. This attempt to enforce a tariff for medical attendance is a new departure in Ireland.

Epidemic Diseases in Dublin.

At the close of last week 52 cases of measles remained under treatment in Dublin hospitals, 17 new cases having been admitted during the week. The number of scarlatina cases was 118, with 18 admissions for the week; diphtheria, 84 cases, with 13 admissions; enteric fever, 92 cases, with 8 admissions. In addition to the above-named diseases, 13 cases of pneumonia were admitted to hospitals during the week, and 39 cases remained under treatment at the end of the week.

Rest for the Dying.

The Archbishop of Dublin presided at the recent annual meeting of the supporters of the institution known as the "Rest for the Dying." This institution during its six years' existence has proved of the greatest value, and has afforded shelter to many who would otherwise have been compelled to end their days in the workhouse. During the past year 73 patients were maintained during their last illness. Of the many Dublin charities, this institution is one of the most deserving.

Health of Kingstown.

Some months ago the post of Medical Superintendent Officer of Health at Kingstown became vacant owing to the death of the previous occupant. The post was advertised as vacant, and a meeting of the District Council was summoned for the purpose of making the appointment. When the meeting was convened, however, a motion was carried postponing the election indefinitely, and it was decided that the duties pertaining to the office of medical superintendent should be carried out by the two dispensary medical officers of the district. As Kingstown is a watering-place and health resort, the opinion is held in many quarters that this action on the part of the District Council will be detrimental to the township, and will also result in danger to the public health, more especially as one of the duties of the medical superintendent was to act as port sanitary authority. A protest has been addressed to the council by the Dublin Sanitary Association, but by a majority of 9 to 7 the council has refused to reconsider the question. The action of the council appears to be determined solely by economical considerations.

During last year 4,390 cases were attended by the nurses of the Birmingham Nursing Society, and this entailed no fewer than 117 319 visits. The East Birmingham Home proved a great success, 576 cases being attended and 11,981 visits paid. The committee regrets that the income of the society does not increase in proportion to the amount of work done, there being a deficiency of £358 in 1910.

Correspondence.

THE AVERAGE MEDICAL INCOME.

SIR,—The importance of forming a correct estimate of the average medical income is emphasized by the publication of the report on the Organization of Medical Attendance in the SUPPLEMENT of March 4th. If too low an estimate prevail, it will form the base upon which remuneration will be founded, whatever scheme may be adopted. I therefore hope that all members able to do so will contribute either criticism of Professor Moore's estimate, or facts upon which to base one more correct. Professor Moore's calculations seem imperfect on the following grounds:

1. They assume that people who are not in clubs pay no more per head for medical attendance than those who are, taking the average of the whole country. Even amongst the working classes this is at best doubtful. One has often heard the assertion that friendly societies at 4s. a head are worth taking, only because their doctor gets also private practice amongst the members' families. One would therefore assume that this paid at a higher rate. In addition, there are enormous numbers of lower middle-class patients who pay higher fees than the working classes, and there are the rich who pay much higher fees. Professor Moore considers that these are counterbalanced by the paupers and hospital casuals, who pay nothing. No one can know if this be so. It is astonishing how many of the latter class do also pay fees to doctors. At all events, an assumption, unsupported by evidence, that the whole nation pays at the same rate as a minority which is not even representative of the whole, allows so wide a margin of error as to be quite inadmissible.

2. They take no account of confinement fees, which are always—and of surgical fees, which are often—extras for club patients.

3. They reckon nothing for insurance work, factory surgeoncy, vaccination, part-time medical officerships of health, and the many other minor appointments which add to the incomes of many general practitioners.

4. They rightly do not deduct from the total of doctors amongst whom the aggregate income is to be divided those men in Poor Law and municipal work who are engaged in treating patients. But neither do they deduct the whole-time medical officers of health, the teachers, pathologists, and retired practitioners, who should be deducted, because they treat no patients, and their incomes are not derived from the source under consideration.

The whole question would be capable of easy and accurate settlement if we could get definite returns from a fair sample group of medical men; without that we are dependent on indirect methods. The average income probably differs in various parts of the kingdom somewhat in proportion to the cost of living in each part. I am under the impression (it is only an impression) that an ordinarily competent man in an industrial district can be reasonably sure of a net income of about £400 per annum after being five or six years in practice. Some practitioners make very much more, a few probably make less. I judge from their style of living, and from positive knowledge in a number of cases. Assistants, who are very few comparatively, make from £180 to £250, reckoning in value of board and lodging. Taking all together, I shall be surprised if the average income in such a district falls much below £400 per annum, and it may be higher. The whole profession will be indebted to those who can supply a more accurate estimate; failing that, the well-considered impressions of a number of observers might land us near the truth.

The other points in Professor Moore's letter are of minor importance. His accuracy I may well leave to be judged by readers of this correspondence, and his method of expression by readers of his book, who will find there much in the same style as the sentence which I quoted. His apparent attacks on club doctors and on other groups of medical men seemed more important, but he now says that he nowhere in his book attacked any body of persons. There is therefore nothing to say except to apologize for my utter lack of power to comprehend the meaning of words.

There are other contentious matters in Professor Moore's letter, but I refrain from remarking on them in order to concentrate attention on the main question—the average medical income.—I am, etc.,

March 8th. T. L. BUNTING.

SIR,—The letter in which Dr. Benjamin Moore attempts to justify his statement that the average medical income is "well within £200 per annum" ought not to allowed to pass without a protest from those who have some knowledge of the facts. One would have thought that any observer, taking a walk through any town and noticing the houses of the medical practitioners, would have inferred that such houses could not be kept up on an income of £200 a year; and, further, a glance through the advertisement pages of the BRITISH MEDICAL JOURNAL for a few weeks or months would disclose the fact that a practice of that size is distinctly rare.

Probably a locumtenent would be as well qualified as any one to judge of the average medical income. He goes to all sorts of practices all over the country, and can estimate from the work done, and from the style of living kept up, pretty well what the income must be. It might be objected that a locumtenent is only employed by a practitioner who can afford to take a holiday; but this is not so, for the greater number of such engagements are due to the illness of the principal, and not to holidays, and the man of small income is as likely to be ill as he of the large income. I was recently acting as locumtenent for a period of nearly two years, and during that time I only once took charge of a practice the income of which was not obviously largely in excess of Dr. Moore's figure; and the one exception was in the case of a young man who had recently commenced practice.

I cannot agree that it is right to take "4s. a year as the average amount paid for medical attendance by every inhabitant of the country." For ten years I was practising in an entirely working-class town, but even there the average was higher. While Dr. Moore discounts the "upper ten thousand," he entirely leaves out of his calculation the very large middle class, whose average annual contribution to the doctor would be many times 4s.

The latter part of Dr. Moore's letter seems to me very regrettable. While reaffirming that the average income is "well within £200," he suggests as adequate an increase of 25 per cent., making £250 in all—just the salary that is paid to a decent assistant. Is it well, especially at the present time, that the Government and the public generally should be given the impression that the average medical man would think himself well off with this amount?—I am, etc.,

London, S.W., March 7th. A. W. HARRISON, M.D.

TO HELP THE BRITISH MEDICAL BENEVOLENT FUND.

SIR,—At the annual meeting of the British Benevolent Fund held on March 6th, I ventured to suggest a plan which I think would secure a large increase of income. However convinced they may be of the value of the work of the society, and however clearly they may see both the duty and the advantage of subscribing, practitioners in the hurry and worry of their lives forget the matter, or let it slide, and nothing is done. My suggestion was that men so situated should get their wives to take the subject over. A kindly disposed and shrewd woman would have two motives for action. She would be helping those who were in distress, and—well aware that her husband had not been able to make any provision—she would embrace the opportunity of securing some assistance should the evil day come to those who were nearest and dearest to her. The amount subscribed need not be large enough to be a burden even to a practitioner of narrow means. What is wanted is a large number of subscriptions coming in regularly, for if the number is considerable the individual sums may be small. Suppose it were agreed that every Saturday night the wife should put sixpence into a box provided for the purpose. Could not every one afford this? By such an arrangement, in the course of the year 26s. would almost insensibly accumulate. In many cases the amount might just as easily be a shilling, or still more. And there should be a

general clearing day, say at Christmas, when the sums collected could be sent to the Honorary Treasurer (Dr. Samuel West, 15, Wimpole Street, W.). If even half the practitioners of Great Britain joined in this plan, it is obvious that a very large amount would come in. Everyone interested in the work of the society will have heard with the keenest satisfaction of the guild which has been established, and in which ladies are rendering such admirable and highly encouraging service. Would not their advocacy secure a large measure of success for the scheme which I have thus roughly outlined?—I am, etc.,

Cambridge, March 14th. HOWARD MARSH.

CONTINUOUS ANTISEPTIC INHALATION IN PULMONARY TUBERCULOSIS.

SIR,—There is one untoward event that must not escape attention in the treatment of pulmonary tuberculosis by the continuous inhalation of drugs, and that is the danger of causing haemoptysis. A patient given a respirator saturated with an antiseptic solution naturally takes deeper and longer breaths. In lungs where a tuberculous ulceration is in progress this is very liable to cause rupture of the capillaries and oozing of blood. I remember distinctly being taught in my student days, although I am unable to give chapter and verse for it at the moment, that the best chance a tuberculous lung has of healing is when it is kept as much as possible at rest. But theories are of small avail in medicine.

Since reading the article of Dr. Burney Yeo in the BRITISH MEDICAL JOURNAL I submitted a patient of mine, an elderly gentleman, who has been what the French call a *poitrinaire* for many years, but who has now developed typical signs and symptoms of pulmonary tuberculosis, to the continuous inhalation treatment, giving a mixture of equal parts of creosote and spirits of chloroform. One week of this treatment brought on very profuse haemoptysis, from which he was quite free previously.

To those who may cavil that my argument is merely *post hoc ergo propter hoc*, I may say that at any rate the continuous inhalation treatment did not succeed in so far healing the lungs as to prevent the haemoptysis.—I am, etc.,

Exeter, Mar. 5th. J. A. W. PERREIRA.

SIR,—I understand that the objections to the continuous inhalation of antiseptics advocated by my former teacher, Dr. Lees, are largely based on the idea that the antiseptic effect is too weak to have any appreciable effect on the tubercle bacillus.

I have no knowledge of what the experience of others who have adopted the method as advocated by him may be, but in one of two or three cases in Dr. Moxon's practice here, in which I am trying Dr. Lees's prescription, I have had, after a few days of continuous inhalation, acute carbolic acid poisoning. I have made it a practice in all cases of dilated stomach to give mij–iv of liquid carbolic acid t.d.s., and have so given it in many scores of cases for considerable periods without ever having any symptoms of poisoning.

I gather, therefore, that more is absorbed by the inhalation method than its detractors suppose.—I am, etc.,

Matlock, March 6th. HENRY BAZETT.

TUBERCULIN AND TUBERCULIN DISPENSARIES.

SIR,—It counts for much that the discussion upon tuberculin dispensaries has drawn from Dr. Philip and Dr. Halliday Sutherland that tuberculin can and should be used in dispensaries. This is a step forward, because I believe that not very long ago Dr. Philip did not approve of the use of tuberculin for treatment at dispensaries, and did not even approve of its use in diagnosis in private cases.

In discussing the value of tuberculin dispensaries *v.* sanatoriums as means of *treating* tuberculosis, Dr. Philip omits to state that I have always been discussing the problem as it affects the poor. I am ready to meet Dr. Philip and all who agree with him on any public platform and discuss the relative merits of tuberculin dispensaries and sanatoriums as means of treating pulmonary tuberculosis among the poor. This is a huge national question.

The greatest authority in the world on the treatment of tuberculosis among the poor, Dr. Weicker of Goerbersdorf, deliberately confessed, after a careful and prolonged trial, that sanatoriums had failed. Not many years ago Dr. Ransome, after carefully investigating the evidence, came to the conclusion (1) that no evidence from English or Scottish sanatoriums was trustworthy (see also Dr. Bulstrode's report), and (2) that the only available evidence—that of German sanatoriums—seemed to prove that four years after treatment one-third of the cases treated were still fit for work.

Dr. Philip claims that the fall of the death-rate from pulmonary tuberculosis in Edinburgh, amounting to a 42 per cent. reduction, is due to the antituberculosis dispensary in Edinburgh. How, then, does he explain as great a fall, even a greater fall, in Aberdeen and Glasgow, where his scheme has not existed? How does he explain a reduction, not by 42 per cent., but by 50 per cent. in Sydney and New South Wales, where we had no sanatorium and no dispensary? I admit that I was using tuberculin in Sydney during that time, but I am not so foolish as to suggest that my presence in Sydney and my use of tuberculin caused this great fall in the death-rate. I am sure that my work did reduce the death-rate, and Dr. Philip's work did the same, but for either of us to claim the credit for the whole fall, or even for most of it, would be absurd. However, with such direct encouragement from Dr. Philip and Dr. Sutherland, we shall continue to use tuberculin both for diagnosis and treatment at the tuberculin dispensaries. *Solvitur ambulando.*

It seems to be forgotten that the tuberculin dispensary is the best place for learning the use of tuberculin and the meaning of mixed infections. I hope that medical men will use the opportunity.—I am, etc.,

W. CAMAC WILKINSON, M.D., F.R.C.P.

London, W., March 13th.

SIR,—It is a great pity that individuals who discuss the *pros* and *cons* of Dr. Camac Wilkinson's method of treatment by progressive doses of tuberculin do not visit his dispensary and make themselves familiar with the process before attempting to criticize it.

Next to Dr. Mearns Fraser, I believe I was the second medical officer of health in the kingdom to investigate the treatment of tuberculosis by massive doses of tuberculin as carried out by Dr. Camac Wilkinson, but I have not yet reported to my authority, as I considered that such an important matter should not be lightly reported on, in view of the opposition there is from those interested in sanatoriums, but I should like to put forward, in a perfectly unbiassed way, what I have seen as the result of my investigations.

One of the earliest cases I saw was a man who had been turned out of one, if not two, sanatoriums as hopeless, and on his first appearance was only able to walk 200 yards with the aid of two sticks. When I saw him last he looked well and said that, save for some indigestion, he felt well, and was able to, and did actually, walk six or seven miles every day. But the most striking point was the district nurse's testimony, who knew the man and visited the houses on either side of his. She stated that previous to his coming to the dispensary the neighbours complained bitterly that they were unable to sleep night after night owing to the man's incessant coughing, but that since his improvement they never heard him at all. When I saw the man last he stated that he felt ready for work.

In another instance a doctor entered the dispensary and sat down next to me and stared hard at a girl that Dr. Wilkinson had just been injecting; then he suddenly exclaimed that the girl had improved so much since he sent her to Dr. Wilkinson some two or three months previously that he did not recognize her at first. In addition, there is the testimony of patient after patient, not only that they feel better, but that they can work better, and such things as these certainly warrant prolonged investigation.

Dr. Camac Wilkinson, both in his book and in his teaching, advocates sanatoriums in cases where the patients can afford it, and in cases of mixed infection. A certain number of the mixed infections he treats by injections of collargol until they are fit to be treated with tuberculin. As a matter of fact, he possessed a sanatorium

of his own in Australia. In his book, on p. 150, he states that:

> The ideal treatment is specific treatment combined with those general methods adopted in the sanatorium that are of undoubted value in increasing the tissue energy, upon which the success of tuberculin treatment depends.

The dispensary in Kennington is run as an experiment to demonstrate the value of his method of using the various tuberculins; for that reason he neither gives them medicine, nor alters their home surroundings, nor the food which they take, so that their recovery can be credited to nothing but his treatment; and the point which he insists on is that for the treatment of the poor, from a public health point of view, the treatment by tuberculin as carried out by him is both the cheapest and the most efficient. He estimates that the treatment of early tuberculosis from first to last costs about £1. What is the alternative in the way of sanatorium treatment? The best figures I can give are those which were put before my authority when they were asked by one of the other authorities in the joint board to utilize our small-pox hospital for phthisis, namely, about £500 a year for seven beds; in view of the cost and the alternative given by the tuberculosis dispensary system I advised against the proposal.

If we take the figures from the Paddington Tuberculosis Dispensary with regard to consumption we find that of 286 contacts which were examined 64 were suffering from pulmonary tuberculosis, 3 from other forms of tuberculosis, and in 104 cases tuberculosis was suspected, that is, 59 per cent. of the contacts. Now in the case of these contacts who are definitely found to have tuberculosis, what form of treatment can a municipality offer which will not take them away from their employment and at the same time by so doing label them as social lepers? The experiences of all authorities that have had to deal with the poor and early phthisis have shown the difficulty in getting people to relinquish their employment, especially when they are the wage-earners. If these cases can be treated efficiently by graduated doses with the various tuberculins, and at the same time kept at their work an immense advance will have been made from a public health point of view, because I am convinced that should this form of treatment prove to be efficient we should have far less difficulty with regard to notification and dealing with consumption generally than we have at present.

If this method of treatment by tuberculin proves to be of value it would become part of the treatment given at the tuberculosis dispensary, and form an integral part of the means of combating the disease at the disposal of the public health service; the time has gone when charitable enterprise should be utilized for provision of means of combating consumption, and it would be a mistake to dissociate this method of treatment, if it proves a success, from the general plan of attack.

I hold no brief for Dr. Camac Wilkinson, but all I ask is that a system that may prove to be in advance of anything that has yet been seen should be given a fair and unbiassed trial. I believe that the number of superintendents of sanatoriums who have visited Dr. Camac Wilkinson's dispensary can be counted on the fingers of two hands. I have seen a large number of cases and have followed up others that I have advised to seek treatment there, and in no instance have I seen any untoward symptoms whatever, and children of 12 to 14 have their injections and make no fuss about it. I think practically all the medical men who have taken the trouble to go to Kennington and actually see the work being done have been amazed; personally my interest has been very great as I have been unfortunate enough to have a case of abdominal tuberculosis amongst my relations. This case was treated by a dose of $\frac{1}{10000}$ mg. of tuberculin, with due observance of Wright's negative phase. This treatment was accompanied by fifteen months', more or less, open-air treatment at the seaside, as far as I can see with complete recovery; but one is quite unable to say how much of it was due to the tuberculin and how much to the sea air. In view of this I have been intensely interested in the views which Dr. Camac Wilkinson puts forward with regard to the size of the dose and the negative phase. I am inclined to think that it is his absolute disregard of Wright's teaching and his somewhat cavalier treatment of Wright's work on every public occasion which has helped to arouse a certain amount of opposition to his system of treatment.

I have not yet finished my observations, but I thought it only right to put these facts down, because, whatever the system be, it should be investigated thoroughly and fairly.

Lastly, may I repeat the warning which I gave to my fellow medical officers of health—that is, that no one should attempt to undertake this treatment until they have been to see Dr. Wilkinson's methods, as I am convinced that unless they are familiar with his intricate methods of dosage, the same failure and disappointment will inevitably ensue as was the case with Koch's original efforts.—I am, etc,

ELWIN H. T. NASH.

Public Health Department,
Town Hall, Wimbledon, March 7th.

SIR,—Permit me to say a few words *re* tuberculin and tuberculin dispensaries. I had the great privilege last year of visiting the dispensary conducted by Dr. Camac Wilkinson at Lambeth I attended, off and on, for two months, and saw about 35 to 40 cases under treatment. During that time I noticed improvement in every single case, and in some wonderful improvement.

There can be no doubt as to the value of the method, and, furthermore, tuberculin, properly given, is perfectly safe. So impressed with this fact have I been that I have not hesitated to select cases at all stages of phthisis from among those attending my out-patient department of the Colonial Hospital, Gibraltar, and to treat them with tuberculin.

Over 10,000 cases of all kinds are seen by myself annually. I began in December, 1910, and some of my cases (especially two third-stage cases, with abundant sputum and bacilli) have improved wonderfully, and none are any the worse. Unfortunately, we do not get early cases. I hope to publish details later.

In diagnosis tuberculin is indispensable; I have excluded a diagnosis of tubercle in three cases suspected of it, and have diagnosed two cases of lupus by the same means. Both these latter had been treated for years by specialists and others without benefit—four and ten years respectively.

I would strongly advise those who have the opportunity to go and see for themselves. "Tuberculin" dispensaries have come to stay, and will prove an untold blessing to the poor.—I am, etc,

L. D. PARSONS,
Assistant Surgeon, Colonial Hospital,
Port Surgeon, and Police Surgeon.

Gibraltar, March 8th.

SIR,—With reference to tuberculin dispensaries, will you permit me to make the following important quotation from the preface by Koch (not present in the English translation), written in 1909 for Bandelier and Roepke's admirable textbook:

> With the employment of specific treatment in ambulatory practice, but only with careful choice of cases, I might express myself as being in agreement.

We have here in 1909 the authority of Koch himself in support of the dispensary treatment by tuberculin, but only, be it noted, *in carefully selected cases*.

Elsewhere Koch states that "in tuberculosis prevention is incomparably more important than treatment, and from the public health point of view the preventive functions of a tuberculosis dispensary are clearly so.

It is obvious that the antituberculosis scheme, first inaugurated in this country by Dr. Philip, together with the institution in connexion therewith of a department for the ambulatory treatment by tuberculin, meets the situation in an infinitely more statesmanlike manner than the more limited tuberculin dispensary with its restricted *careful choice of cases*. But great credit is due to the tuberculin dispensary movement as to the opsonic index for popularizing this most important subject.

It is unnecessary to discuss details of tuberculin treatment. There are great differences of opinion. The most comprehensive exposition of the subject is to be found in the textbook mentioned. But the general principle of the successful ambulatory treatment by tuberculin *in carefully selected cases* has been established beyond a shadow of

doubt, and one is therefore justified in incorporating it in any public antituberculosis movemement.—I am, etc.,

London, S.W., March 14th. ROBERT CARSWELL, M.A., M.B.

SIR,—I am one of the "medical superintendents" mentioned by Dr. Pringle of Ipswich in his recent communication, and should like, in a spirit of chastened humility, to express my views on this important subject, the more so as my experience of tuberculin treatment during the last three years has been limited to the observation of its effect in 150 cases.

One of the features of the present-day campaign against tuberculosis is that it embraces several distinct lines of attack, which though individually of great importance, yet fail to secure the best results, by reason of the absence of any sustained united action. It is unfortunate that those who believe in the special virtue of any particular line of treatment should proceed to advocate it publicly as the one and only means by which tuberculosis can be stamped out, and not infrequently attempt to magnify its importance by depreciating the results obtained by other methods, or even by the same method under different conditions.

In the pages of the JOURNAL recently we have had two separate methods advocated for the treatment of tuberculosis, one the inhalation of volatile antiseptics, and the other inoculations with tuberculin. It is evidently necessary to emphasize once more that modern sanatorium treatment includes both these measures; and if these methods when employed alone have proved to be curative measures of such value, by how much more will they prove of value when used under medical supervision in combination with the other important details of sanatorium treatment? In the sanatorium these two distinct methods of treatment are found to yield the best results in different types of cases. Whereas in closed tuberculosis of the lungs antiseptic inhalations are quite useless, it is in this type that inoculations with increasing doses of tuberculin is found to be the treatment *par excellence*. On the other hand, the continued inhalation of volatile antiseptics is of great service in cases of acute and mixed infection in which inoculations with tuberculin are contra-indicated. These two methods of treatment serve to illustrate the futility of recommending one line of treatment in opposition to another, instead of insisting that the one is supplemental to the other.

The correspondence on the treatment of tuberculosis by tuberculin has arisen from the somewhat trenchant advocacy of the tuberculin dispensary by Dr. Wilkinson. Personally, I believe that the dispensary as a weapon in the warfare against tuberculosis has a future, and that inoculations with tuberculin should form part of the treatment at all antituberculosis dispensaries, provided always that when the stronger tuberculins are used in increasing doses a careful record of the temperature is kept. The result of Dr. Wilkinson's tuberculin campaign will be a more extended use of that specific remedy in the treatment of tuberculosis, and this can only be regarded as a distinct gain when viewed, not from a restricted one-sided standpoint, but in its broad relationship to the whole question of treatment. It is to be regretted, however, that instead of falling into line and grafting his scheme on to the existing movement against tuberculosis, Dr. Wilkinson should have compelled attention to his views by depreciating much of the beneficial work which has been done in this country during the past ten years, giving rise thereby to much confusion of thought and uncertainty as to action. Moreover, the title "tuberculin dispensary" conveys a wholly wrong impression. It suggests vaccine treatment alone, whereas the dispensary embraces much more, as is shown by the explanation which Dr. Mearns Fraser has given. Those who have under contemplation a scheme for the treatment of tuberculosis may have confidence in adopting, as an initial step, either the sanatorium or the dispensary, but a combination of both is what should finally be aimed at. It is altogether a matter of personal opinion as to which method of treatment should be adopted first. After careful consideration of the subject, Dr. Mearns Fraser has decided to recommend the dispensary system, but he frankly admits that provision for the treatment of reactive cases will probably have to be made.

The following conclusions are based on a somewhat wide experience of sanatorium methods, including tuberculin treatment:

1. That inoculations with tuberculin T.R. or bacilli emulsion have a specific beneficial effect in suitable cases.
2. That the use of any milder form of tuberculin is unnecessary in cases non-reactive to walking exercise and manual labour.
3. That in open pulmonary tuberculosis the use of the stronger tuberculins should always be accompanied by a careful record of the temperature.
4. That the continuance of tuberculin treatment after leaving the sanatorium is desirable in many cases.
5. That the dispensary, as pointed out by Dr. R. W. Philip years ago, is a necessary adjunct to the sanatorium, and should work in co-operation with it.
6. That any adequate scheme for the treatment of tuberculosis in populous districts must have co-ordination of effort and unity of action, and should include sanatorium accommodation, a tuberculosis dispensary, and provision for the isolation of advanced cases.—I am, etc.,

Liverpool Sanatorium, March 13th. H. HYSLOP THOMSON.

*** While willing to receive corrections of errors of fact into which any correspondent may have fallen, we are unable to find space for the prolongation of this correspondence.

THE VALUE OF DIPHTHERIA ANTITOXIN AS A PROPHYLACTIC AGENT.

SIR,—With regard to Dr. George Hardwicke's letter suggesting the extended use of diphtheria antitoxin as a prophylactic, I believe it is now regarded by most authorities as a dangerous method, in view of the possibility of the necessity of an injection later on, should the patient contract diphtheria, in which case the further treatment by serum injection may result in anaphylaxis.

As for the dose mentioned, most authorities agree that with the smaller dose used in the first instance the onset of anaphylaxis after the second dose is likely to be the more severe.

It appears to me to be better to use a vaccine in prophylaxis, and in cases of prolonged persistence of diphtheria bacilli in the throat this latter treatment has proved of benefit in causing their disappearance.—I am, etc.,

Bristol, March 12th. JOHN WM. TAYLOR, M.B.

LADY HEALTH VISITORS OR WOMEN SANITARY INSPECTORS.

SIR,—The letter published in the BRITISH MEDICAL JOURNAL for March 4th, p. 529, under this heading, will probably create some confusion in the minds of your readers between the two officials named, and it may be of interest to state how the matter stands.

When the first General Public Act of 1875 came into operation, the Sanitary Institute inaugurated examinations for inspectors of nuisances, and these examinations have been regularly continued up to the present time, and have been extended to all parts of the Empire. The examination is open to both men and women, and latterly an increasing number of women have entered for the examination and obtained certificates.

In practice the duties of women sanitary inspectors differ from those of men, but as there is no distinction in the duties as set out by the Local Government Board, it has been considered well that all candidates as inspectors of nuisances should pass the same examination, the certificate for which is recognized by the Local Government Board as a qualification for this office outside London.

Local authorities, however, found that, in addition to the duties carried out by the sanitary inspector, other useful work could be done by rather differently trained women in visiting the homes in the poorer districts, advising with regard to the home arrangements, and the feeding and care of children, therefore another officer, called a health visitor, was appointed for this purpose.

At first candidates prepared themselves for this new office by passing the examination for inspectors of nuisances, but as the nature of the duties rendered it important that they should be specially qualified in

matters relating to personal hygiene and the care of children, subjects which do not come within the scope of the duties of an inspector of nuisances as set out by the Local Government Board, the Council of the Royal Sanitary Institute thought well to establish a separate examination; and when on the passing of the County Council (General Powers) Act of 1908 the appointment of health visitor became a statutory office in London, the Local Government Board in a memorandum defining the duties of these officers cited the certificate of the Royal Sanitary Institute as a qualification.

For both of the examinations candidates are required to give evidence of practical training in the subjects before entering for the examination, and, although the two examinations are for their respective purposes of similar standard value, the syllabus and subjects for each are very different. In one examination a certificate is given as "Inspector of Nuisances," and for the other a certificate for "Women Health Visitors and School Nurses."

The title of "Lady Health Visitor" is not used by the Royal Sanitary Institute, nor has the Institute ever suggested that the training or examination for women health visitor would be appropriate for the post of inspector of nuisances.—I am, etc.,

LOUIS C. PARKES,
Chairman of Council,
Royal Sanitary Institute.

London, S.W., March 8th.

QUALIFIED OPTICIANS.

SIR,—Two important points have hardly been touched upon in the correspondence on this subject. One is that myopia is often progressive, and requires more knowledge and experience for its treatment than these so-called qualified opticians can boast of; the other is that these men are not allowed to use a cycloplegic, and they are therefore unable to work out the refraction of patients who are suffering from spasm of accommodation, and in many cases of hypermetropic astigmatism they either order simple spherical lenses or if a cylinder is added the angle is very often incorrect. This I can prove from my own casebooks, and last year I had no less than 25 cases of uncorrected astigmatism amongst the *clientèle* of one qualified optician; in many cases the patient had been wearing the glasses for twelve months.

Dr. Seymour Taylor says, "Moderately poor people will go where they may please," etc. Quite so; it is a free country, but it was quite unnecessary for Dr. Taylor to try to shepherd them into the fold of unqualified practitioners (many of these opticians are also prescribing chemists).—I am, etc.,

Lincoln, March 12th. STANLEY GREEN.

SIR,—The additional contribution which Mr. Percy Dunn makes to this discussion does not convince me. He merely makes statements, doubtless believing that they are unanswerable. This method of controversy is not logical, though it may be argumentative.

Are "matters of midwifery generally matters of urgency"? This is indeed news. In my earlier days in a country practice I was generally spoken to by an expectant mother some months—always some weeks—before the event.

But the qualified midwife is as much a member of a lower order of practitioner as is an optician with a diploma, and, no matter to whom the midwife is responsible, she is allowed to undertake work and to perform minor operations, such as hypodermic injections, which, according to Mr. Percy Dunn's views, should only be done by a qualified medical practitioner. The reason of all this is that a certain class of women can neither engage a qualified medical man nor go to a hospital.

Further, I would inform Mr. Percy Dunn that a certificated optician does seek the aid of an oculist in such cases as require special skill, and he is admonished to do so by those who grant him his certificate.

But Mr. Percy Dunn now shifts his basis of argument. In a former contribution he contended that no one was competent to correct a misshapen eye unless he had "an expert and trustworthy experience" derived from "treating the thousands of cases which fall to the lot annually of ophthalmic surgeons in their hospital work." Does Mr. Percy Dunn not see that this statement implies that few practitioners are competent to deal with errors of refraction?

But now he says that the question is "one of principle and of principle alone." Here I am in agreement with my friend. The first principle of our profession is not one of self, but the alleviation of bodily suffering.

Spectacle makers have a right to live and to sell spectacles. Therefore it were surely wiser to train them, so that they shall have some knowledge of a deformed eye and the requisite corrections, rather than to allow them to prescribe in ignorance. And I can assure Mr. Percy Dunn that the diplomates of the Spectacle Makers' Company have a very expert knowledge of errors of refraction, and that the mistakes which they make are relatively very few.

Again, people will take their children "to the shop of a maker of surgical appliances for a spine support" if their children have twisted spines; they will buy compensatory boots or other apparatus for a distorted limb, and I do not hear such wails and laments from the orthopaedic surgeons as emanate from the oculists.

Let us take a broad view of matters. The optician is consulted by the moderately poor because it is found that he affords relief which is comparatively quickly and easily obtained. It is only here and there that we find a medical man, whether consultant or general practitioner, who is so competent.

The fault of all this heart-burning really lies at the doors of our controlling authority. A fairly competent knowledge of eye diseases and deformities should be required of every candidate for medical registration. At present such a knowledge is not compulsory, and examiners seldom ascertain whether the candidate possesses it or not. In proof of this I would refer my friend, Mr. Percy Dunn, to a resolution recently adopted by the Council of the British Medical Association, and forwarded to the Council of the Royal College of Surgeons of England, in which it is stated "that it is desirable that the estimation of refraction errors . . . should be compulsory subjects in every medical curriculum," etc. I could not wish for stronger support of my contention than this.—I am, etc.,

London, March 11th. SEYMOUR TAYLOR.

THE ORIGIN OF THE LONDON SCHOOL OF MEDICINE FOR WOMEN.

SIR,—The letters of Miss Mary Thorne and Miss Sophia Jex-Blake in your recent issues concerning the foundation of the London School of Medicine for Women in 1874 are no doubt perfectly correct so far as they go. My father, the late Dr. James Edmunds, took no part whatever in this later stage of the movement for the medical education of women, because, as your kind obituary notice states, "he was not altogether favourable to carrying the medical education of women to the point of enabling them to become registered." I do not read into your obituary notice any such meaning as these ladies have done; and I should have thought their disclaimer unnecessary. Any possible ambiguity in the meaning has been increased by Miss Thorne leaving out the first part of the sentence she has quoted and prefixing it with my father's name.

At the same time, I venture to think that these ladies have done themselves a slight injustice in omitting any acknowledgement of my father's very considerable services in the early days of the movement. No doubt, it is to the ladies themselves, especially to Mrs. Garrett Anderson, that the prime credit of both originating the movement and bringing it to a successful issue is due. But Dr. Edmunds was the first medical *man*, by his organization of and work for the Female Medical Society, who helped ladies medically disposed with his sympathy and practical labour, and that, too, in the days when a medical woman was regarded with public ridicule and with professional disfavour. He helped them to grow the wheat; others helped them later to bake the bread.

If I may trespass further on your space it seems right to state the following facts about the Female Medical Society, derived from the printed and other records of the society which are still available:

The Female Medical Society was inaugurated on October 3rd, 1864, at a meeting in the Hanover Square rooms. The Marquis Townshend was the first president, followed later by the Earl of

Shaftesbury. In the list of some forty-three patrons, vice-presidents, and members of committee are the following names: The Duke and Duchess of Argyll, Archbishop Manning, Baroness de Rothschild, Mrs. Gladstone, Lord Houghton, Professor F. W. Newman, Drs. Aldis, Buchanan, Mackenzie, Hardwicke, Elliott, and others eminent in almost every branch of public life. Its objects were:

"1. To promote the employment of properly educated women in the practice of midwifery and the treatment of the diseases of women and children.

"2. To provide educated women with proper facilities for learning the theory and practice of midwifery and the accessory branches of medical science."

Dr. Edmunds was the honorary secretary, and also one of the lecturers. The other lecturers were E. W. Murphy, A.M., M.D., D. H. Dyte, M.R.C.S., C. H. Drysdale, M.D., M.R.C.S., J. A. R. Newlands, F.C.S., John Locking, M.D., and George Ross, M.D. The course on obstetrics alone comprised eighty lectures of one hour each; and each student was required to attend personally twenty-five deliveries under qualified superintendance at a lying-in hospital or maternity charity. Other courses comprised anatomy and physiology, chemistry, materia medica, diseases of women, diseases of infants, and "general medical science." The earlier lectures were given at 4, Fitzroy Square, the later ones at 164, Great Portland Street. One of the later prospectuses states, "This society has carried on for five years the Ladies' Medical College. . . . Eighty-two ladies have already availed themselves of its advantages, and many of these ladies are settled in practice, and succeeding admirably.

Apparently the society came to an end in 1869, partly from want of funds and partly because the ladies themselves, being dissatisfied with its scope, broke off. Some of them (as Miss Thorne states) spent five years unsuccessfully trying other fields, such as Edinburgh, which brings us to 1874 and the foundation *by them* of the present London School of Medicine for Women, giving a full curriculum and opportunity to register.

Now if these statements are true (if untrue they stand to be corrected), I submit that the Female Medical Society is entitled to rank historically as the first organized nucleus and platform of the movement for the medical education of women; that the London School of Medicine for Women is a later and much more perfect development of the same movement, the continuity between the two institutions having been preserved by the lady medicos themselves; and that your statement that "The Female Medical Society only lasted a few years, and was afterwards merged in the London School of Medicine for Women" may be passed as a substantially accurate abbreviation of the facts.—I am, etc.,

London, W., March 13th. PERCY JAMES EDMUNDS.

Universities and Colleges.

UNIVERSITY OF LONDON.

University College Hospital Medical School.

THE *Calendar* of the school for the session 1910–11 is illustrated by photographs of the hospital and of the medical school building opened in 1907. There is a directory of the former students in the faculty of medicine in University College in two parts, arranged alphabetically and topographically. (London: Langley and Sons, Limited. 1910. Med. 8vo, pp. 177; 2s. 6d., post free 3s.)

THE UNIVERSITY OF LEEDS.

The Medical Terms.

IN consequence of the new regulations which are now in operation, the ending of the second term will not be marked by the holding of any degree examinations in the Faculty of Medicine, except in the subjects of preliminary scientific training; the lectures will end on March 22nd. On April 24th the third term of the Faculty of Medicine begins, and will be a short one, for the second and final examinations for the degrees of M.B., Ch.B., begin on June 24th. On this occasion the degrees in all the faculties will be conferred on the same day—namely, July 1st.

Teaching of Mental Diseases.

Some months ago Mr. W. Bevan-Lewis, who for many years has been the medical superintendent of the West Riding Asylum at Wakefield, resigned his position at that institution as he was beginning to feel the necessity of a complete rest. The loss to the West Riding of a man of the calibre of Bevan-Lewis is one which will be felt in many circles, and his place will be hard to fill. Happily Mr. Bevan Lewis retires in good health, and those who know him best will be assured that his resignation from the trying duties of the supervision of a large asylum will not carry with it a cessation of work, but that his activities will find some outlet in scientific and literary directions. Consequent on his leaving Leeds the Chair of Mental Diseases at the university became vacant, and in the annual report of the council his services have been duly and suitably referred to in the following terms:

"As the Medical Director of the Wakefield Asylum he worthily sustained the scientific reputation of that institution which it had gained under the notable administration of Sir James Crichton-Browne, and by his untiring labours and remarkable ability he was able to advance in a marked degree the knowledge of his special subject. His connexion with the School of Medicine, which extended over twenty-six years, has added greatly to its reputation, and his relations with his colleagues and students were always of the most pleasant character."

It may be remembered that some two years ago Professor Bevan-Lewis placed his resignation of the professorship in the hands of the council, but that he yielded to their request that he should continue to conduct his clinical teaching at the West Riding Asylum, and in respect of that to retain the title of professor. At the same time Dr. Bedford Pierce, of York, was appointed Lecturer on Mental Diseases. In order that the council of the university might be free to place the teaching of mental diseases both by lectures and by clinical means in the hands of one man, Dr. Bedford Pierce very generously placed his resignation of the lectureship before the council, which they reluctantly accepted with a cordial expression of thanks for his services. The council of the university have been fortunate in finding in the successor of Mr. Bevan-Lewis as Superintendent of the West Riding Asylum one who is fully competent to undertake the work, and at a recent meeting they invited Dr. J. Shaw Bolton to accept the professorship. This invitation has been accepted, and the new superintendent of the asylum will be cordially welcomed by his colleagues in the university, and especially by those of the Faculty of Medicine.

UNIVERSITY OF DURHAM.

ARMSTRONG COLLEGE, NEWCASTLE-ON-TYNE.

THE *Calendar* for 1910–11 (London and Newcastle-on-Tyne: Andrew Reid and Co. Price 1s. 4d., post free) gives a full account of the College, including the scholarships at its disposition and courses required for the various degrees of the University of Durham. Mining and marine engineering, as well as Arts, figure largely in its pages. Since the year 1909 the College has ranked as one of the three constituent units of the University of Durham. At its foundation in 1871 it was intended to be the home of the Faculty of Science of that University. Its name was changed on its enlargement in 1904.

UNIVERSITY OF WALES.

THE *Calendar* of the University of Wales for the Academic Year 1910–11, (Oswestry: Woodall, Minshall, Thomas, and Co.) sets forth the original charter of the university, and the supplemental charter which empowered it to grant degrees in medicine and surgery; also its statutes, which impose on candidates for medical degrees a curriculum longer than that of any other university in Great Britain. The volume includes several appendices detailing the courses of study proposed for initial degrees during the current year, and a list of members of the graduates' guild.

UNIVERSITY OF BOMBAY.

THE *Calendar* for the year 1910–11 is issued in two volumes, and supplies very detailed information regarding the University of Bombay, its constitution and charters, degrees, holders thereof, and the very numerous scholarships and prizes at the disposition of its authorities. The second volume contains all the examination papers set in the various faculties in the year 1909.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on March 9th, Mr. H. T. Butlin, President, in the chair.

The Examination in Dental Surgery.

The following recommendation from the Board of Examiners in Dental Surgery was adopted:

That the following alteration be made in Clause 2, Section II, of the Regulations for the Licence in Dental Surgery, to enable candidates who have complied with the necessary conditions to present themselves for examination in Mechanical Dentistry and in Dental Metallurgy separately:

Present Clause.

2. The First Professional Examination consists of Mechanical Dentistry and Dental Metallurgy. Candidates who have passed the Preliminary Science Examination may present themselves for the First Professional Examination for the Licence on production of the certificates required under Section I. Clauses 2, 3, and 4.

Proposed Clause.

2. The First Professional Examination consists of: Part I, Mechanical Dentistry, and Part II, Dental Metallurgy. These parts may be taken together or separately. Candidates who have passed the Preliminary Science Examination may present themselves for Part I on production of the certificates required under Section I, Clauses 2, 3, and 4 (*c*) and (*d*), and for Part II on production of the certificates required under Section I, Clauses 4 (*a*) and (*b*).

The Royal Commission on University Education in London.

It was decided that evidence should be offered on behalf of the College to the above Commission. The names of those already appointed for this purpose are Sir Henry Morris and Sir Alfred Pearce Gould.

The following resolution was passed:

That, as it has been found to be impossible to proceed with the suggestion adopted by this College for combined examinations for medical degrees by the Royal Colleges and the university, the Council do not lay any detailed proposals before the Royal Commission, but instruct their delegates, besides stating their individual views, to point out: (1) The disability under which London medical students are placed owing to the difficulty of obtaining degrees in the Faculty of Medicine of the university, a disability not experienced in other parts of the United Kingdom. (2) The action taken by this College in the past with the object of removing this disability. (3) Its continued willingness to co operate in any scheme for making the degrees in the Faculty of Medicine more accessible to London medical students.

Central Midwives Board.

The thanks of the Council were voted to Mr. C. H. Golding-Bird for his annual report of the proceedings of the above board. In concluding his report Mr. Golding-Bird expressed the hope that a new Midwives Act might be forthcoming to correct the anomalies and supply the deficiencies of the present one.

Obituary.

ANDREW SMART, M.D., F.R.C.P.E., LL.D.EDIN.,

FORMERLY LECTURER ON CLINICAL MEDICINE, EXTRA-ACADEMICAL SCHOOL, EDINBURGH.

AT his son's house, 78, Bertram Road, Hendon, N.W., on Wednesday, March 8th, Dr. Andrew Smart died at the ripe age of 87 years. Half a century ago Dr. Smart graduated in medicine at the University of Edinburgh after a distinguished course. Later he studied at London, Dublin, Berlin, Prague, Vienna, and Paris, a procedure not so common in those days as now. In 1864 he became a Member of the Royal College of Physicians of Edinburgh, and a Fellow in the following year. In this year, at the request of the Lord Provost and magistrates of Edinburgh, he presented his report "On the Pathology, Treatment, and Prevention of Rinderpest," in which he described an infective agent. It is remarkable that a comparatively young practitioner of medicine in the city of Edinburgh would thus seem to have been the first to find a germ in living tissue. In the description of one of the drawings of the blood appearances in rinderpest he delineated the "chains of minute bodies lying between and completely surrounding the blood cells and other histological elements. The structures," he added, "in virtue of their prodigious numerical superiority, occupy the entire microscopical field." The observations published in 1865 attracted much attention, and a report of a committee of pathologists and agriculturalists made to the New York State Agricultural Society in 1867 contains the following passages referring to Dr. Smart's observations: "We have seen that when the virus of rinderpest has been absorbed it permeates, within a few hours, every portion of the blood, rendering each drop a fresh medium for inoculating the healthy animal with the pest. It would almost seem credible that the poison is a vital germ feeding upon the cells and serous portion of the blood, thereby appropriating its vital constituents and propagating its kind until the red corpuscles become amorphous and shrivelled." Thus in his earlier days Dr. Smart was somewhat in advance of his time.

In 1883, he published *Germs, Dust, and Disease; Two Chapters in our Life-History*. He also published papers on the "Treatment of Anaemia and Chlorosis by the Chief Irons Commonly in Use," "Trephining in Basal Haemorrhage," "Undescribed Cardiac Sounds Liable to be Mistaken for Murmurs of Valvular Origin," "Alcoholic Paralysis," "Undescribed Respiratory Neuroses," and "Effects of Diet and Drugs on the Elimination of Sugar in Diabetes Mellitus." He was formerly Physician to the Edinburgh Royal Infirmary, and at the time of his death was Consulting Physician to the Institution; he was also an Honorary Physician to the Royal Public Dispensary. He was an Extraordinary Member of the Royal Medical Society, and an Honorary Member of the New York Agricultural Society. At various times he held the appointments of Assistant to the Professor of Practice of Medicine and to the Professors of Clinical Medicine in the University of Edinburgh, Lecturer on Clinical Medicine in the Extra-Academical School of Edinburgh Examiner in these subjects for the colleges and the university, the first University Lecturer for the Higher Education of Women in the subjects of Physiology, and Institutes of Medicine, and President of the Royal Medical Society.

Dr. Smart, who was a member of the British Medical Association, took an active part in the work of the annual meetings in Edinburgh, being Secretary of the Public Medicine Section in 1875 and Vice-President of the Section of Tropical Diseases in 1898. He is survived by his wife, four sons (one of whom is in the medical profession), and two daughters.

Medico-Legal.

WORKMEN'S COMPENSATION ACT.

Death from Angina Pectoris.

POWELL'S TILLERY STEAM COAL COMPANY, Limited, *v.* Hawkins, heard in the Court of Appeal on February 23rd, affords a very interesting corollary to the famous case of Clover, Clayton, and Co., *v.* Hughes, where the House of Lords laid it down that if death is caused by exertion in the course of the employment of a diseased workman, it is death by accident, although the exertion could not have injured an healthy man. In the present case it appeared that the man, on the day of his death, had been engaged to sharpen props, his usual work being to help another man to push trucks. He made no complaint at the time he went to this other work, but after he had been engaged upon it for about ten minutes he had to stop owing to illness. He was taken home, and died the same afternoon from angina pectoris. The medical evidence was to the effect that the deceased's heart was in a bad condition of long standing. Angina pectoris might be brought on by several causes; it might be due to circumstances which could scarcely be called an accident at all. It might be due to very slight exertion, and it did not always follow immediately on exertion, and it could not be foreseen that the exertion would immediately or after a given space of time result in an attack. The county court judge came to the conclusion on the whole of the evidence that the deceased, who was an elderly man, over-exerted himself during the operation of pushing or tumbling a tram, and thereby brought on an attack of heart trouble from which he died, and consequently he made an award in favour of the applicants. On appeal, the Master of the Rolls said that he was unable to arrive at the same conclusion as the learned county court judge. In the House of Lords the Lord Chancellor said, in the case of Barnabas *v.* Bersham Colliery: "In cases under this Act, in the same way as in cases under any other Act or at common law, the plaintiff must prove his case; and although he may establish a state of facts which leads one to think that his version is quite a possible version of what took place, he must do something more than show a state of facts which is consistent with either one or with another view." And Lord Halsbury said: "Propositions must be proved in a court of law by proof of evidence and that is not satisfied by surmise, conjecture or guess." The appeal must be allowed, because there was no evidence that the accident arose out of the employment.

Alleged Injury from Vitriol.

In Farley *v.* Kynochs, Limited (*Birmingham Daily Post*, February 24th) it appeared that Farley had worked for the respondents for about twenty-five years, and for eighteen years had been engaged in cleaning empty cartridges. On November 16th he was so engaged when some solution of vitriol and water which was used for the purpose of treating the cartridges, and which was in a boiling state, splashed into his eye. Suffering some pain, the applicant consulted a doctor, and on November 30th he went to see the foreman, and applied for a ticket for admission to the hospital. On the advice of a surgeon he became an in-patient, and remained there from December 3rd to 10th. He was still an out-patient of the hospital, and owing to the condition of his eye had been unable to follow his employment.

The applicant said that about twenty-two years ago he met with a mishap to his right eye, the result being that it had to be taken out. This accident occurred while he was employed at Kynochs. He admitted the compound was very weak, containing about 1 per cent. of vitriol.

Dr. Martin Young said that the state of the man's eye was consistent with the condition he should expect to find had a splash of boiling vitriol solution gone into it.

Dr. Jameson Evans, on behalf of the respondents, said when he first saw the applicant at the hospital, he had superficial and deep inflammation of the left eye. Four days later the sight was becoming hazy. This haziness increased, and on December 29th a fresh spot appeared. The inflammation had subsided, but the spots had not cleared off. Witness stated that he could not attribute the condition of the applicant's eye to a burn by sulphuric acid or hot water. It might have been caused by other things; there was no burn on the eye.

Dr. Clarkson, who was consulted by the applicant on November 17th, said he found no trace of a burn then.

His Honour held there had been an accident, and allowed compensation at the rate of 18s. 10d. a week from December 3rd, the date on which the man left work.

Loss of Finger.

H. J. writes: What would be reasonable compensation for a man at 60 to claim? He was employed at £3 a week; his job, a special one, requires the use of a finger which has been rendered useless by an accident. He is fit for other work—if he can get it.

*** The full compensation provided by the Act would be £1 a week so long as total incapacity lasts. If there is partial incapacity, the employer may provide such work as the man is able to do, and at this he may earn his old rate of wages. If no such work can be obtained either from the employer or others, then it will be for the county court judge to award, having all the facts of the case before him, the amount of compensation to which, in his judgement, the man is entitled, either by a weekly payment or by an agreement under which the workman receives a lump sum, the amount of which the judge will decide.

VALUE OF OUTSTANDING ACCOUNTS.

E. J. C.—There is nothing to prevent an outgoing partner from accepting an agreed sum for his share of outstanding debts. The amount to be paid will depend on the value of these debts—that is to say, on the financial position of the debtors; and without knowing this it would be impossible to say what would be a fair sum in any particular case.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

BRANCH SURGERIES.

ETHICS.—Branch surgeries are open to the objection that they involve responsibility for patients at too great a distance to be supervised properly; but telephones and motor-cars have diminished the force of this, and it has always been recognized that in scattered districts, where there are few doctors, a branch surgery is permissible as being a public advantage.

The Services.

ROYAL ARMY MEDICAL CORPS.

EXAMINATION FOR PROMOTION.

Stations Abroad (except India).

THE following is the result of the promotion examination held in December last for Majors of the Royal Army Medical Corps in "Technical Subjects," Part I, Appendix XIV, King's Regulations:

Major J. G. BROGDEN, (*d*) ii; .75. Already passed in Part I. Exempt Part II, Appendix XIV, King's Regulations.

Major A. C. FOX, Part I, Subject 2, Appendix XIV, King's Regulations. Already passed in (*d*) ii and in Part I, Subjects 1 and 3. Exempt Part II, Appendix XIV, King's Regulations.

Capt. N. J. C. RUTHERFORD, M.B., (*d*) ii; .75. Already passed in (*h*).

Capt. M. H. BABINGTON, (*d*) ii. Already passed in (*h*).

Capt. J. A. ANDERSON, M.B., (*d*) ii; .75. Has yet to pass in (*h*).

Capt. E. T. POTTS, M.D., (*d*) ii. Already passed in (*h*).

Capt. J. B. G. MULLIGAN, (*d*) ii; .75. Already passed in (*h*).

Lieut. C. MCQUEEN, (*h*) ii and iii. Already passed in (*b*), (*d*) ii, and (*h*) i.

Lieut. A. N. R. MCNEILL, M.B., (*d*) ii and (*h*); .75 in (*d*) ii and .8 in (*h*). Special certificate. Has yet to pass in (*b*).

Lieut. H. H. LEESON, (*h*). Already passed in (*b*) and (*d*) ii.

[All the above have yet to pass in a "Medical Staff Tour," Part II, Appendix XIV, King's Regulations.]

AT a meeting at Battersea Town Hall, on March 9th, a presentation to Dr. L. S. McManus was made by Mr. Shirley Benn, M.P., in recognition of Dr. McManus's twenty-five years' work in Battersea. It consisted of a cheque for £300, two fruit dishes and an album, together with a bracelet for Mrs. McManus. Remarkable testimony was paid to Dr. McManus's public and municipal work in pushing forward schemes for improving the health and advancing the social welfare of the people in Battersea. Among the objects for which he had worked the museum and recreation room, gymnasiums, and youths' clubs were specially mentioned. Many working men paid tributes to the kindness and generosity which Dr. McManus had displayed throughout his practice, and Dr. S. H. Curry, a member of the Borough Council, testified to the regard which the profession in the district felt for Dr. McManus. We regret to learn that Dr. McManus, owing to illness, was unable to be present at the meeting.

Public Health AND POOR LAW MEDICAL SERVICES.

NOTIFICATION OF BIRTHS ACT.

IN the House of Commons Mr. Wedgwood asked the President of the Local Government Board how many local authorities had adopted the Notification of Births Act, the names of the county boroughs which had not adopted the Act, and the average infant death-rate in 1905 and 1910 in those county boroughs which had and in those which had not adopted the Act.

Mr. Burns has made the following reply: The Act has been adopted for or put in force in 271 areas of local government, namely:

How the Act was Put in Force.	Metropolitan Boroughs (Including City of London).	County Boroughs.	Non-County Boroughs.	Urban Districts other than Boroughs.	Rural Districts.
By adoption by local sanitary authorities	22 Comprising the whole County of London.	53	46	59	1
By an order under Section 3	7	—	—	—	—
*By adoption by the Worcester County Council	—	—	4	7	17
*By adoption by the Herts County Council	—	—	3	16	13
*By adoption by the Leicester County Council	—	—	1	9	13
Total	29	53	54	91	44

* The adoptions by the County Councils of Worcestershire, Hertfordshire, and Leicestershire were in respect of the whole of their administrative counties except the urban districts of (1) King's Norton and Northfield (Worcester), (2) Stourbridge (Worcester), (3) Watford (Herts), and (4) Market Harborough (Leicester), the Urban District Councils of which had previously adopted the Act. The administration of the Act in the Stourbridge Urban District was subsequently transferred to the County Council of Worcestershire by an Order under Section 2 (4) (*b*). The adoption by the Hertfordshire County Council does not take effect until June 1st, 1911, and the formalities for the adoption of the Act by the Leicestershire County Council are not yet complete.

As regards the latter part of the question, the figures for 1910 were not available, and the figures for 1909 were therefore given in the following tables:

County Boroughs in which the Notification of Births Act is in Force, with the Infant Mortality Rates (Deaths under 1 Year of Age per 1,000 Births) in 1905 and 1909.

Name of County Borough.	Infant Mortality. 1905.	1909.	Name of County Borough.	Infant Mortality 1905.	1909.
Bath	91	83	Newport (Mon.)	125	115
Birmingham	154	134	Northampton	126	110
Blackburn	146	126	Norwich	174	119
Blackpool	133	112	Nottingham	155	150
Bolton	167	128	Oldham	150	119
Bootle	155	122	*Portsmouth	133	96
Bradford	144	116	Preston	154	136
Brighton	101	96	Reading	121	95
Burnley	173	156	Rochdale	133	104
*Burton-upon-Trent ...	87	102	Rotherham	123	116
Bury	147	130	St. Helens	134	150
Cardiff	118	103	Sheffield	167	118
*Chester	122	118	Smethwick	137	113
Croydon	95	80	Southampton	132	106
Derby	151	123	Southport	113	103
Dudley	167	140	Stockport	168	132
Exeter	122	99	Stoke-upon-Trent ...	147	126
*Great Yarmouth ...	132	125	Swansea	131	159
Grimsby	174	118	Walsall	141	139
Halifax	131	97	*Warrington	147	130
Ipswich	144	92	West Bromwich ...	146	123
Kingston-on-Hull ...	152	114	West Ham	153	124
Lincoln	148	82	*Wigan	164	173
Liverpool	153	144	Wolverhampton ...	137	138
Merthyr Tydvil	193	143	Worcester	154	101
Middlesbrough	173	158	York	129	99
Newcastle-upon-Tyne ...	135	119			

* Act adopted since 1909.

County Boroughs in which the Notification of Births Act is not in Force, with the Infant Mortality Rates in 1905 and 1909.

Name of County Borough.	Infant Mortality.		Name of County Borough.	Infant Mortality.	
	1905.	1909.		1905.	1909.
Barrow-in-Furness ...	135	81	Leeds	151	122
Birkenhead	127	123	Leicester	148	127
Bournemouth	83	100	Manchester	157	134
Bristol	122	100	Oxford	116	75
Canterbury	119	73	Plymouth	135	131
Coventry	108	97	Salford	148	141
Devonport	113	96	South Shields	146	137
Gateshead	138	112	*Sunderland	142	135
Gloucester	118	95	Tynemouth	153	129
Hastings	113	79	West Hartlepool ...	146	113
*Huddersfield	119	95			

* Compulsory notification of births has been in force under the provisions of local Acts in Huddersfield since 1906, and in Sunderland since 1907.

DUTIES OF MEDICAL OFFICERS OF HEALTH.

AT a meeting of medical officers of health, representing thirty sanitary districts in the Administrative County of Devon, held at Exeter recently under the chairmanship of Dr. S. Noy Scott, President of the South-Western Branch of the British Medical Association, to discuss, with the county medical officer, the extra duties imposed by recent legislation in public health matters, it was resolved to inform the sanitary authorities that the meeting was in favour of antitoxin being used as a prophylactic, as well as a curative agent, for poorer people and Poor Law cases, as defined in the letter of the Local Government Board, dated August 15th, 1910. It was also resolved to request the various authorities to grant an increase of salary, as suggested by the Local Government Board, on account of the many extra duties thrown on medical officers of health by recent medical discoveries, Acts of Parliament, Orders and Regulations of the Local Government Board, and the Memorandum of the Board of Education and Local Government Board, 1910, in relation to infectious diseases among school children, and contacts and school closure.

DUTIES AND REMUNERATION OF DISTRICT MEDICAL OFFICERS.

E. C. C. writes: I. Would the L.G.B. sanction extra payment for using diphtheria antitoxin and attending in: (*a*) Parish patients; (*b*) patients unable to pay for antitoxin in one's opinion, and on whom the antitoxin may be used previous to consulting guardians?

II. My guardians have saddled me with thirty old age pensioners. They tell me probably I will have to attend another 200, with no addition to present remuneration. Is that what the law allows?

III. Can the guardians' clerk deduct pension money from an extra pay for a fracture?

IV. I charged £2 for a fracture of left humerus and dislocation of left ulna and radius. I was granted £1. Is that correct?

V. Can you recommend any up-to-date book on the duties of a district medical officer?

*** I. We are not aware of any regulation which enables district medical officers to make a special charge for using antitoxin either for pauper or other patients. It is for the sanitary authority of the district to decide in what circumstances antitoxin may be supplied gratuitously.

II. It is the duty of all district medical officers to attend all old age pensioners who may be granted medical orders by authorized officials.

III. Fees paid as extras are properly taxed towards pensions in the same way as fixed salaries.

IV. The authorized fee for the case in question is £1.

V. We are not aware of any monograph of recent date on the duties of district medical officers, but we are told that it is not unlikely that one will shortly be published.

IT has already been announced in the JOURNAL that the first meeting of the International Permanent Committee of the seventeenth International Congress of Medicine will be held in London on April 21st and 22nd, 1913, under the presidency of Dr. F. W. Pavy. Any suggestion as to the arrangement of the list of sections should be sent on or before April 1st, 1913, to the honorary general secretary of the Permanent Committee, Professor H. Burger, Vondelstraat 1, Amsterdam, or to the bureau of the committee, Hugo de Grootstraat 10, The Hague. The committee will be glad to receive, before the same date and at the same addresses, any other communications concerning the organization of the congress.

Medical News.

AT the meeting of the Royal Society on Thursday afternoon next Mr. C. G. Douglas and Dr. J. S. Haldane, F.R.S., will read a paper on the causes of absorption of oxygen by the lungs in man.

AT the time of the Exhibition of Hygiene which is to be held at Tunis in April (18th to 28th) under the presidency of Dr. Conseil, Director of the Tunis Bureau of Hygiene, there will be a Congress of Colonial Hygiene.

AT the annual meeting of the Liverpool Medical Institution it was resolved to change the name to "The Liverpool Medical Society." The proposed change excited a good deal of opposition, and on March 6th the decision was reversed.

THE *London Gazette* of March 7th announces that the King has been pleased to approve the appointment of John Pringle, C.M.G., M.B., and John F. Ker, Superintending Medical Officer, to be nominated members of the Legislative Council of the Island of Jamaica.

AT the meeting of the Medico-Legal Society, at 11, Chandos Street, London, W., at 8.30 p.m., on Tuesday next, two papers will be read, one on how far the abuse of drugs can be prevented by law, by Mr. H. W. Gadd, and the other on "patent medicines," by Dr. Tunnicliffe.

THE Mayor of St. Marylebone will preside at the fifth annual meeting of the St. Marylebone Health Society at the Town Hall, Marylebone Lane, W., at 5 p.m., on Monday next. The meeting will be addressed by Miss Broadbent, Dr. Eric Pritchard, and Dr. Charles Porter, M.O.H.

THE next course of instruction in the diagnosis and treatment of fevers in the hospitals of the Metropolitan Asylums Board will begin on May 1st. The fee is three guineas for two months' or four guineas for three months' course. Full particulars can be obtained from the clerk of the Metropolitan Asylums Board, Embankment, E.C.

THE annual general meeting of the Association of Medical Officers of Health will be held at the Holborn Restaurant on March 23rd, at 3.15 p.m. The annual report states that the number of members is 258, and that the financial state is satisfactory. The council will recommend the election of Dr. Davison as chairman, and the re-election of Dr. Belilios and Dr. Gibbes-Smith as honorary secretary and treasurer respectively.

DR. PHILIP FRANK, Major F. A. Brooks, M.D., and Lieutenant-Colonel Edwin Lee, M.R.C.S. (from Honorary Associates) are appointed Knights of Grace of the Order of St. John of Jerusalem in England. Major Brooks is of the First East Anglian Field Ambulance, Territorial Force; Lieutenant-Colonel Lee is medical officer, 4th Battalion the King's Own Yorkshire Light Infantry.

AT Bury, Lancashire, there are seven cases of small-pox in the hospital; two cases, notified on March 14th, were women who worked in the same cotton mills as the first person affected; a man suspected to be suffering from the disease also worked at the same mill. In London the number of cases under treatment at the Metropolitan Asylums Board's hospitals is 48, and a case has occurred at Hampton in a young man engaged in London every day.

IN its report of a bazaar held in aid of the Tuberculin Dispensary established by Dr. Hilda Clark at Street, the *Central Somerset Gazette* states that in addition to the tuberculin injections the patients follow the open-air treatment, with due regard also to diet, etc. It is understood that, so far, Mr. W. S. Clark has been largely responsible for providing the working funds, but for continued work it is necessary that a proper fund should be established and also money be obtained for the purchase of shelters for the following of the open-air treatment. In these shelters, either hired, lent to the patients, or purchased by them, the patient can rest in bed or on a couch in the open air, yet sheltered from the rain or sun, as the sides are made to open or close.

SINCE the date of the visit to Bath paid after the Annual Meeting of the British Medical Association last year, an important addition has been made to the equipment of this natural mineral water health resort. This is a department provided with all forms of the apparatus originally devised and advocated by Zander of Stockholm for securing the rhythmical use of different groups of muscles, and the movement, either active or passive, of the joints which such muscles normally control. As the work done with the assistance of these machines can be very precisely graduated and calculated, their utility in dealing with patients either indisposed to exercise or partly incapacitated therefrom by contracted joints is indubitable.

THE fifteenth annual report of the Yarrow Home for Convalescent Children of the Better Class shows that during last year 900 children were admitted, 462 being boys and the rest girls. The average stay of each child was 37.5 days, and the weekly expenditure on each child £1 1s. 7d. Of 864 children who left the home during the year 808 showed an increase in weight, averaging a little over 3.5 lb.; 30 had decreased in weight, and 26 showed no change. This home, situated at Broadstairs, is privately endowed and is specially intended for children whose parents are of the professional and educated middle classes but whose means are somewhat limited. The weekly charge is 5s. Further information can be obtained from the secretary, Mr. W. F. Sheldrick, 6, Holborn Viaduct, London.

AMONG the fixtures for July is the First Universal Races Congress, which is to be held at London University from July 26th to July 29th, and has the support of eminent persons in as many as fifty countries. Its object is the discussion "in the light of modern knowledge and modern conscience of the general relations subsisting between the peoples of the West and those of the East, between so-called white and so-called coloured peoples, with a view to encouraging between them a fuller understanding, the most friendly feelings, and a heartier co-operation." The list of readers of papers includes many well-known English names. In connexion with it there will be an exhibition of books, documents, photographs of the highest human types, skulls, charts, etc., under the direction of Professor Alfred C. Haddon, D.Sc., F.R.S. Further information can be obtained from the Honorary Secretary, Mr. George Spiller, 63, South Hill Park, Hampstead.

THE fifth annual meeting of the Association of Certificated Dispensers was held in the Court Room of the Apothecaries' Hall, Blackfriars, E.C., on March 9th, Mr. Montagu Smith, Lewisham Infirmary, presiding. There was a large attendance, the majority of those present being engaged in one or other of the public services. After confirmation of the minutes of the previous annual meeting, the financial statement showing a balance of £69 7s. 7d. to the credit of the association was submitted. Mr. A. Howell, hon. secretary (Dalston Dispensary), in his annual report stated that the number of members was about 450. The extension of the Local Government Board's orders to the Metropolitan Asylums Board service was instanced as a result of the association's activity. Several matters of interest and importance to the members had received careful consideration in the proper quarters, and important developments might be expected in the near future. The register kept by the honorary secretary had been successful in assisting members to fill vacancies. The committee for the ensuing year was elected; the three principal officers being re-elected. Votes of thanks were passed to the master and wardens for the use of the court room, and to the chairman, treasurer, secretary, local secretaries, and committee.

THE greater part of the milk consumed in London, as in other large towns, is brought by trains from country farms. The fact that it comes from the country used to be a consolation to householders and anxious parents, but many investigations both in London and elsewhere show that the advantage is illusory, and that the milk brought into large towns is very frequently grossly contaminated with dirt of various sorts. There is no doubt that cows can be kept in a city in good health and good yielding if they are properly looked after, and if the dairyman understands his business and handles his milk carefully it will be a cleaner and wholesomer fluid than most of the fluid introduced from the country. We have recently inspected the cowsheds of Mr. E. J. Walker, 48, Sloane Street, S.W., and we were able to satisfy ourselves that the dozen cows in Church Street, S.W., were free from tuberculosis, not only on the evidence of the tuberculin tests, but also on the evidence of the examinations made at the Lister Institute, which showed that no guinea-pig developed tuberculosis when injected with the samples sent at short intervals. The sanitary condition of the sheds is excellent, the udders of cows are kept in good order, and every reasonable precaution is taken to render the milk clean and pure. The filters remain almost free from deposit after the nursery milk has been passed through. Milch cows, as has been said, respond well to artificial diet, if this be properly chosen, and the result as far as quality of milk is concerned is highly satisfactory. We should therefore recommend medical practitioners who find a reliable source of nursery milk of value in their practice to pay a chance visit to the dairy and cowsheds of this firm, and ascertain for themselves what is being done in a crowded part of London to improve the milk supply for infants and invalids.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

A. B. C. asks, as to the use of fibrolysin injections in uterine fibroids, for information as to the method, dose, and results.

J. A. asks: Should a woman, 30 years of age, marry, whose brother had an attack of acute mania after an attack of appendicitis? Two cousins on the maternal side have suffered from depression entailing ceasing work for three months in one case and one year in the other.

PERPLEXED would be glad of advice respecting a girl, aged 16, who is 4 ft. 11 in. in height, and has grown only 1 in. since she began to menstruate at the end of her thirteenth year. She is healthy and strong; is of studious habits, passing the Senior Oxford Local Examination with honours and distinction when 15 years and 4 months old. Any practical suggestion to increase her stature would be gratefully received.

SOFTENING WATER BY LIME.

A. W. writes: Our local water supply has 10 degrees of hardness (Clarke's scale), which has been reduced by a softening process to 10 grains per gallon; but this is still too much for my rheumatism. What weight or quantity of quicklime would *precipitate* the utmost amount of the lime still remaining—that is, 10 degrees (Clarke's scale)? I note your pregnant caution as to not adding too much.

ANSWERS.

H. C. D.—No notice can be taken of anonymous communications.

DR. S. C. REID (Blackburn) writes to recommend "W. J. L." to try chloretone in small doses. [In Martindale and Westcott's *Extra Pharmacopoeia* the dose of chloretone, trichlor-tertiary-butyl-alcohol, is given as 5 to 24 grains in cachet, capsule, or tablet, followed by a draught of water or milk, or suspended in a mixture.]

J. E.—We presume that our correspondent's inquiry has reference to a chief medical officer resident in London who would act as adviser and consultant of a friendly society. So far as we know, a fixed salary is offered, and its amount, no doubt, would be dependent on the amount of work required from the officer.

DR. H. J. THORP (Ipswich) writes, in reply to "North," that the burning pains in the legs and feet at night are probably gouty manifestations, and should be treated accordingly, both medicinally and dietetically.

TREATMENT OF AMENORRHOEA.

DR. JOS. S. BOLTON (Nottingham) writes: In reply to "X. Y. Z." (February 18th, p. 415), sparks to the spine from a static machine or high-frequency apparatus are very successful.

WOMEN AND HOSPITAL COMMITTEES.

MR. CONRAD W. THIES, Secretary of the Royal Free Hospital, London, writes, in reply to "Devonian," that women have been members of the Committee of Management of that hospital since 1896. At the present time, out of a total of thirty members of the Committee of Management, there are four ladies, of whom two are members of the weekly board. Mr. Thies adds that the advice and views of women on many questions of hospital administration, especially in regard to the nursing and domestic departments, have proved of great value to the committee.

LETTERS, NOTES, ETC.

TUBERCULOSIS OF JOINTS.

DR. J. REID (London) writes: The treatment recommended by Mr. Lane (BRITISH MEDICAL JOURNAL, March 11th, 1911, p. 538) will recall the good effects of a rhubarb mixture thirty years ago, in tubercle cases, by old practitioners, when the fashion was to order antiseptic inhalations, etc. Just think of the satire of Molière on M. Purgon.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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